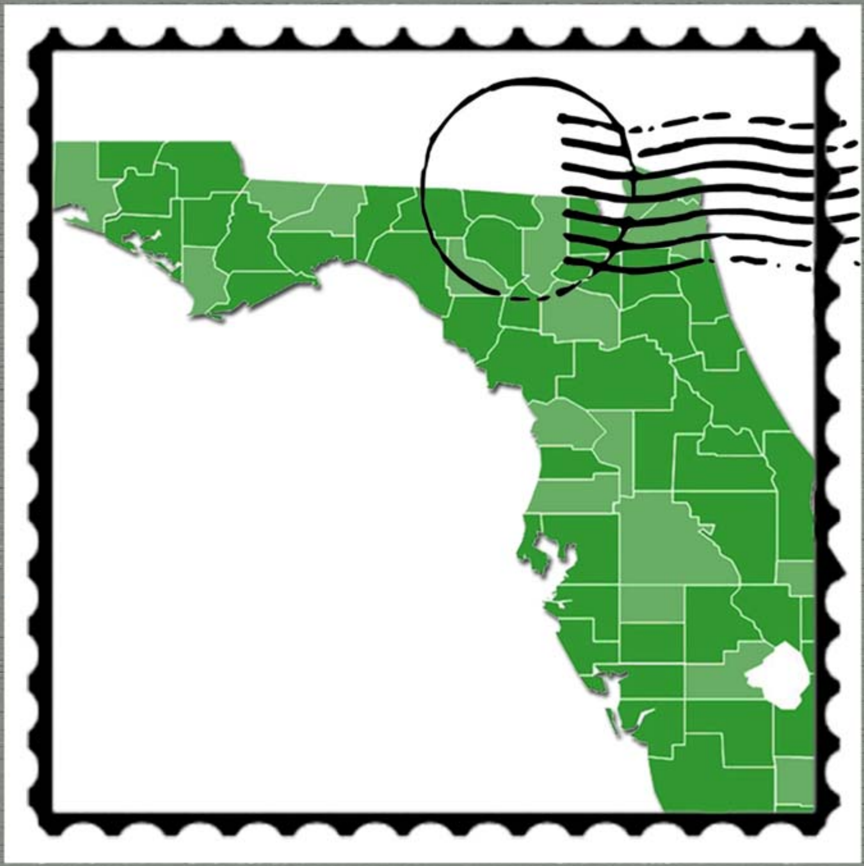
Florida Department of Health
Bureau of Epidemiology



2010 Florida Morbidity Statistics Report

Florida Morbidity Statistics

2010

Florida Department of Health
Division of Disease Control
Bureau of Epidemiology
4052 Bald Cypress Way, Bin # A-12
Tallahassee, Florida 32399-1720
850-245-4401

http://www.doh.state.fl.us/

Florida Morbidity Statistics Report 2010:
http://www.doh.state.fl.us/disease_ctrl/epi/Morbidity _Report/amr_2010.pdf

Published December 2011

Table of Contents

Acknowledgements

The Florida Morbidity Statistics Report is the official record of the occurrence of notifiable disease in Florida and this edition marks the fifty-fifth publication since 1945. The mission statement of the Florida Department of Health is “to protect and promote the health of all residents and visitors in the state through organized state and community efforts, including cooperative agreements with counties.” This report directly supports the mission of the department by identifying patterns and trends in the incidence of disease that are used as the scientific basis for development of disease control and prevention strategies and policies.

Protection of the public’s health from existing, emerging, and re-emerging diseases requires diligence in all aspects of public health. Our most important partners in identifying and characterizing emerging trends in disease are the physicians, nurses, laboratorians, hospital infection-control practitioners and other health care professionals who participate in reportable disease surveillance. Without their participation, our ability to recognize and intervene in emerging public health issues would be much more limited.

Travel-related illness in Florida was a concern in 2010 and this report contains a special section on recent trends in travel-related illness. In 2010, an earthquake and subsequent cholera epidemic in Haiti presented significant potential for the importation of disease into the state. On January 12, 2010, a 7.0 magnitude earthquake struck in the area surrounding Port-au-Prince, Haiti. The Florida Department of Health and our disease control partners were able to quickly respond to this humanitarian crisis. Florida, as the U.S. state located closest to Haiti, became an initial focal point for assisting the federal repatriation and humanitarian parolee efforts. As the crisis developed, the Department worked to identify the introduction of cholera and prevent local transmission within Florida after an outbreak was identified in Haiti. The Department’s response required the collaboration of county health departments, many bureaus, divisions and public health partners. This collaboration was essential to ensure an efficient and effective response to this state, national, and global concern.

The Division of Disease Control and the Bureau of Epidemiology would like to thank the other program areas within the Florida Department of Health that contributed information to this report including the Bureau of Immunization, Bureau of HIV/AIDS, Bureau of Sexually Transmitted Diseases Prevention and Control, Bureau of Tuberculosis Control and Refugee Health, Bureau of Environmental Public Health Medicine, and the Bureau of Laboratories. Finally, many thanks are extended to the County Health Department staff and other public health professionals who are involved in reportable disease surveillance, either through disease control activities, case investigations, data collection, or other essential functions.

We hope readers will find this document useful when setting priorities for action at the individual and community level to prevent and control disease in Florida.

Julia Gill, Ph.D., M.P.H.
Director, Division of Disease Control

Mary Hilton, M.N.O
Chief (Acting), Bureau of Epidemiology

Florida Morbidity Statistics Report Staff

Editors

Kate Goodin, M.P.H.	Bureau of Epidemiology
Catherine Lesko, M.P.H., C.P.H.	Bureau of Epidemiology
Aaron Kite-Powell, M.S.	Bureau of Epidemiology
Janet J. Hamilton, M.P.H.	Bureau of Epidemiology
Richard Hopkins, M.D., M.S.P.H.	Bureau of Epidemiology
Kim Bowman	Bureau of Epidemiology

Contributors

Avalon Adams-Thames, M.P.H.	Bureau of Epidemiology
Sevim Ahmedov, M.P.A.	Bureau of Tuberculosis and Refugee Health
Margie Alderman, R.N.	Hendry County Health Department
JoEllen Alvarez	Palm Beach County Health Department
Isabel Anasco, R.N., B.S.N.	Alachua County Health Department
Leena Anil, M.V.Sc., Ph.D.	Bureau of Environmental Public Health Medicine
David Atrubin, M.P.H.	Hillsborough County Health Department
Ron Baker, M.S.	Bureau of Laboratories
Rosanna Barrett, M.P.H.	Bureau of Environmental Public Health Medicine
Linda Beyer, R.N., B.S.N.	Lee County Health Department
Carina Blackmore, D.V.M., Ph.D.	Bureau of Environmental Public Health Medicine
Dean Bodager, R.S., M.P.A., D.A.A.S.	Bureau of Environmental Public Health Medicine
Leona Braithwaite, M.P.H.	Highlands County Health Department
Ronetta Campbell, R.N., B.S.N.	Bureau of Immunization
Lekisha Cohen, M.P.H.	Bureau of Sexually Transmitted Diseases Prevention and Control
Lisha Constantine, M.P.H.	Bureau of Epidemiology
Adrian Cooksey, M.P.H.	Bureau of Sexually Transmitted Diseases Prevention and Control
Mark S. Crowley, M.S.	Collier County Health Department
Gregory Danyluk, Ph.D., M.P.H., M.S.	Seminole County Health Department
Gloria Davidson	Highlands County Health Department
Jessica Fung Deerin, M.P.H.	Bureau of Epidemiology

Timothy Doyle, M.P.H.	Bureau of Epidemiology
Michael Drennon, M.S.P.H.	Bureau of Epidemiology
Leah Eisenstein, M.P.H.	Bureau of Epidemiology
Frantz Fils-Aime, M.P.H.	Miami-Dade County Health Department
Sandra Forero	Palm Beach County Health Department
Sallie Ford	Lafayette County Health Department
Michelle Franz, L.P.N.	Sumter County Health Department
Mike Friedman, M.P.H.	Bureau of Environmental Public Health Medicine
Kate Goodin, M.P.H.	Bureau of Epidemiology
Ingrid Gray, M.P.H.	Bureau of Sexually Transmitted Diseases Prevention and Control
Janet J. Hamilton, M.P.H.	Bureau of Epidemiology
Terri Harder, B.S.N., R.N.	Collier County Health Department
Tania Harper, M.P.H.	Orange County Health Department
Richard Hutchinson	Bureau of Environmental Public Health Medicine
Patrick Jenkins, M.P.H.	Broward County Health Department
Barbara Johnson, R.N.	Palm Beach County Health Department
Robyn Kay, M.P.H.	Bureau of Epidemiology
Beverly Keith, R.N., B.S.N.	Orange County Health Department
Diane King, R.N., M.S.P.H.	Palm Beach County Health Department
Aaron Kite-Powell, M.S.	Bureau of Epidemiology
Richard Hopkins, M.D., M.S.P.H.	Bureau of Epidemiology
Tara Hylton, M.P.H.	Bureau of Epidemiology
Brian Lang, M.P.H.	Bureau of Epidemiology
Becky Lazensky, M.P.H.	Bureau of Environmental Public Health Medicine
Phil Lee, M.Sc., F.I.B.M.S.	Bureau of Laboratories
Catherine Lesko, M.P.H., C.P.H.	Bureau of Epidemiology
Ryan M. Lowe, M.P.H.	Bureau of Environmental Public Health Medicine
Lorene Maddox, M.P.H.	Bureau of HIV/AIDS
Christina Malloy, R.N., B.S.N.	Bureau of Immunization
Colin Malone, M.P.H.	Bureau of Epidemiology
Kateesha McConnell, M.P.H., C.P.H.	Bureau of Tuberculosis and Refugee Health
Alvaro Mejia-Echeverry, M.D., M.P.H., A.R.N.P.	Miami-Dade County Health Department
Mara Minichniewicz, M.P.H.	Bureau of HIV/AIDS
Valerie Mock	Bureau of Laboratories

Holly Montejano, M.S.	Bureau of Epidemiology
Prakash Mulay, M.B.B.S., M.P.H.	Bureau of Environmental Public Health Medicine
Pedro Noya-Chaveco, M.P.H.	Miami-Dade County Health Department
Tiffani Onifade, Ph.D., M.S.	Bureau of Environmental Public Health Medicine
Scott Pritchard, M.P.H.	Sarasota County Health Department
Patricia Ragan, Ph.D., M.P.H.	Bureau of Epidemiology
Deva Rea, M.P.H., R.N., B.S.N.	Orange County Health Department
Cizao Ren, M.D., Ph.D.	Bureau of Epidemiology
Kimberly Rogers, M.P.H., C.P.H.	Hillsborough County Health Department
Casey Richards	Escambia County Health Department
Laura Rutledge, R.N., B.S.N.	Bureau of Immunization
Max Salfinger, M.D.	Bureau of Laboratories, Bureau of Tuberculosis and Refugee Health
Adlin Santiago	Hillsborough County Health Department
Ann Schmitz, D.V.M., A.M.	Bureau of Epidemiology
Ana Scuteri	Osceola County Health Department
Danielle Stanek, D.V.M.	Bureau of Environmental Public Health Medicine
Lillian Stark, Ph.D., M.P.H., M.S.	Bureau of Laboratories
Juan Suarez	Bureau of Environmental Public Health Medicine
Lois Taylor, R.N., B.S.N.	Florida Newborn Screening Follow-up Program
Robin Terzagian	Bureau of Environmental Public Health Medicine
Karen Thomas, M.D., M.P.H.	Martin County Health Department
Lasheba Travis, M.S.	Hendry County Health Department
Kathleen Van Zile, M.S.E.H., R.S.	Bureau of Environmental Public Health Medicine
Ruth Voss, M.P.H., R.N.	Duval County Health Department
Janet Wamnes, M.S.	Bureau of Environmental Public Health Medicine
Lea Wansborough, M.P.H.	Bureau of Epidemiology
Sandra Warren	Palm Beach County Health Department
Sharon Watkins, Ph.D.	Bureau of Environmental Public Health Medicine
Mackenzie Weise, M.P.H.	Bureau of Epidemiology
Michael T. Wiese	Hillsborough County Health Department
Charlotte White	Bureau of Epidemiology
Siri Wilson, M.P.H.	Alachua County Health Department

Introduction

Purpose

The Florida morbidity report is compiled to:

1. Summarize annual morbidity from notifiable communicable and environmental diseases, and cancer in Florida;
2. Describe patterns of disease as an aid in directing future disease prevention and control efforts; and,
3. Provide a resource to healthcare and public health authorities at county, state, and national levels.

Report Format

This report is divided into 8 sections:

Section 1: Summary of Selected Notifiable Diseases and Conditions
Section 2: Selected Notifiable Diseases and Conditions
Section 3: Summary of Foodborne Disease Outbreaks
Section 4: Summary of Antimicrobial Resistance Surveillance
Section 5: Summary of Notable Outbreaks and Case Investigations
Section 6: Recently Published Papers and Reports
Section 7: Summary of Cancer Data, 2008
Section 8: Public Health Laboratory Status Report

Data Sources

Data presented in this report are based on reportable disease information received by county and state health department staff from physicians, hospitals, and laboratories throughout the state. Data on occurrence of reportable diseases in Florida were obtained through passive and sometimes active surveillance. Reporting suspect and confirmed notifiable diseases or conditions in the State of Florida is mandated under Section 381.0031, Florida Statutes (F.S.), and Chapter 64D-3, Florida Administrative Code (F.A.C.). People in charge of laboratories, practitioners, hospitals, medical facilities, or other locations providing health services (can include schools, nursing homes, and state institutions) are required to report diseases or conditions and the associated laboratory test results listed in the Table of Notifiable Diseases or Conditions, Chapter 64D-3, F.A.C. Reporting test results by a laboratory does not nullify the practitioner's obligation to also report the disease or condition. These data are the basis for providing useful information on reportable diseases and conditions in Florida to healthcare workers and policymakers, and would not be possible without the cooperation of the extensive network involving both private and public sector participants.

1. Passive surveillance relies on physicians, laboratories, and other healthcare providers to report diseases to the Florida Department of Health (FDOH) using a confidential morbidity report form, electronically, by telephone, or by facsimile.
2. Active surveillance entails FDOH staff regularly contacting hospitals, laboratories, and physicians in an effort to identify all cases of a given disease.
3. Increasingly, information about cases of reportable diseases is passed from providers, especially laboratories, to the FDOH as electronic records, which occurs automatically.

References

Specific references are noted appropriately throughout this report. The following reference was used for the majority of notifiable diseases and conditions contained in Section 2.

David L. Heymann (ed.), *Control of Communicable Diseases Manual*, 19th ed., American Public Health Association Press, Washington, District of Columbia, 2008.

Interpreting the Data

This report should be interpreted in light of the following limitations:

1. Under-reporting
Evaluations of infectious disease reporting systems have, in general, indicated that the completeness of reporting varies by disease. The less common, more severe reportable diseases such as bacterial meningitis, diphtheria, poliomyelitis, botulism, anthrax, tuberculosis, and congenital syphilis are more completely reported than the more common but (individually) less severe diseases such as hepatitis A or campylobacteriosis. Variation in reported disease incidence at the local level probably reflects, to varying degrees, both differences in the true incidence of disease and differences in the vigor with which surveillance is performed.

2. Reliability of Rates
All incidence rates in this report are expressed as the number of reported cases of a disease or condition per 100,000 population unless otherwise specified. Animal rabies is only reported as the number of cases or as the rate based on human population, because no reliable denominators exist for animal populations. Rates for diseases with only a few cases reported per year can be unstable and should be interpreted with caution. The observation of zero events is especially difficult to interpret. All rates in the report based on fewer than 19 events should be considered unreliable. This translates into a relative standard error of the rate of 23% or more, which is the cut-off for rate reliability used by the National Center for Health Statistics.

3. Reporting Period
The data in this report are aggregated by the date the case was reported to the Bureau of Epidemiology for each of the years presented, based on standard weeks as outlined by the Centers for Disease Control and Prevention. Week 1 of each year through week 52 of each year comprise the reporting year. Frequency counts included only cases reported during this time. In some cases, diseases reported in 2010 may have onset or diagnosis dates in 2009.

4. Case Definition
Cases are classified as confirmed, probable, or suspected at the local level, using a published set of surveillance case definitions (Surveillance Case Definitions for Select Reportable Diseases in Florida, available at http://www.doh.state.fl.us/disease_ctrl/epi/surv/CaseDefinitions.html). For cases of selected diseases, these classifications are reviewed at the state level. In this report confirmed and probable cases have been included for all diseases, but no suspected cases have been included.

5. Place of Acquisition of Disease or Condition
The distribution of cases among Florida counties is determined by the patient's reported county of residence. Cases are allocated to their county of residence regardless of where they became ill or are/were hospitalized, diagnosed, or exposed. Cases in people whose official residence is outside the state of Florida, but who became ill or are/were hospitalized or diagnosed in Florida, are not included. These cases are referred through an interstate reciprocal notification system to the state where the patient resides.

6. Population Estimates
All population estimates are from the Community Health Assessment Resource Tool Set (CHARTS). The CHARTS system receives its estimates from the Florida Legislature's Office of Economic and Demographic Research (EDR). Estimates are updated once per year in the CHARTS system. Note that previous editions of this report may show somewhat different populations for a given year than the ones shown here, as these estimates are revised periodically.

7. Incomplete Case Information

Certain analyses may not include all reportable cases of a specific disease due to incomplete case information. For graphs denoting month of onset, it is important to note that only those cases of disease for which an onset date could be determined are included.

Florida County Boundaries

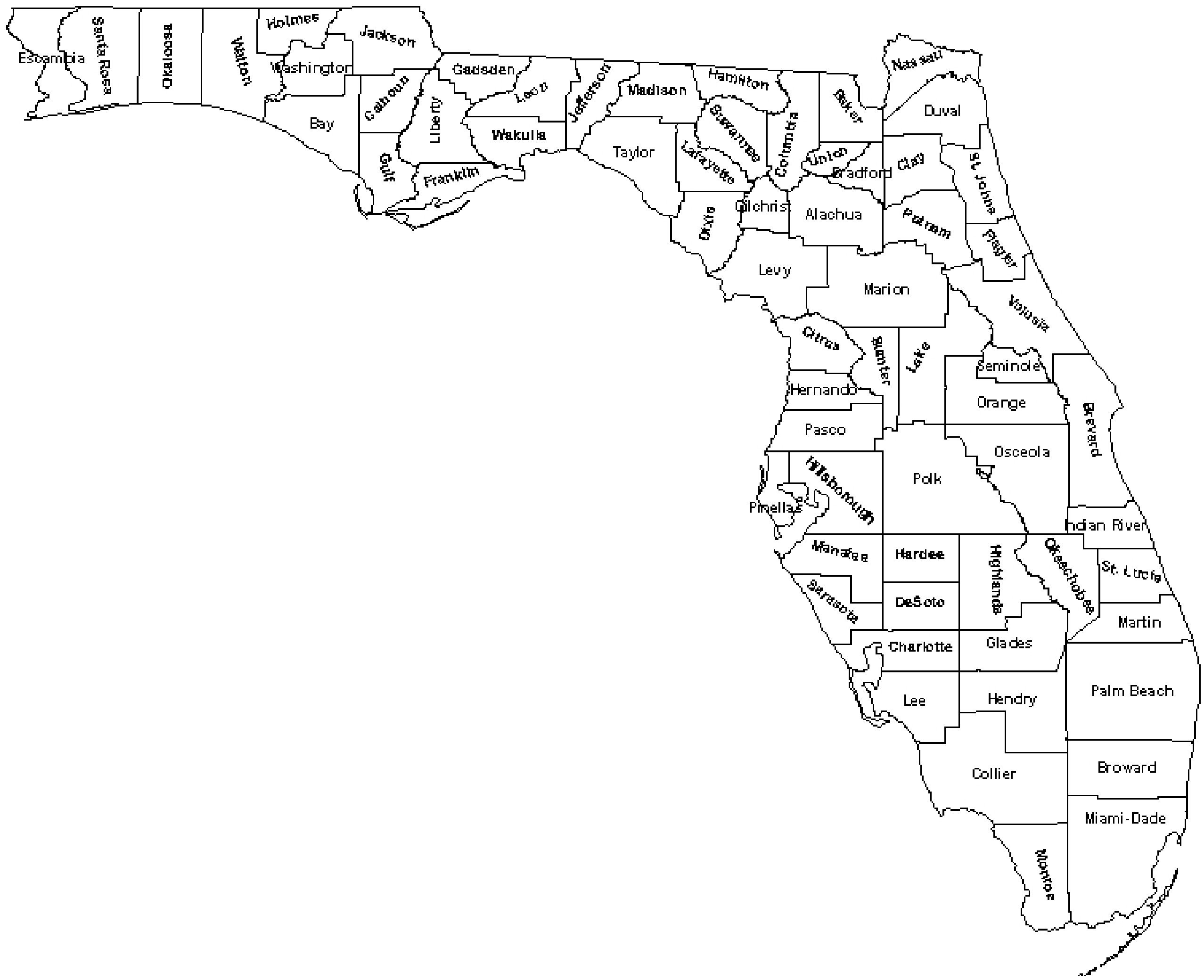


Table A. Florida Population by Year and County, 2000-2010. (Source – Florida CHARTS; accessed February 2011)

County	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
State Total	16,074,896	16,412,296	16,772,201	17,164,199	17,613,368	18,018,497	18,440,700	18,731,287	18,896,559	18,818,998	18,788,795
Alachua	219,239	224,397	229,524	232,110	237,374	241,858	244,648	248,183	249,788	254,690	257,762
Baker	22,388	22,641	23,105	23,472	24,069	23,980	25,216	25,692	25,905	26,049	25,936
Bay	148,692	150,748	152,818	155,414	159,108	162,499	166,160	167,881	168,817	169,955	170,367
Bradford	26,110	26,136	26,649	27,084	27,865	28,195	28,685	29,131	29,304	29,108	29,365
Brevard	478,541	487,131	497,429	510,622	524,046	534,596	545,460	553,481	557,741	555,944	554,908
Broward	1,631,445	1,654,923	1,673,972	1,706,363	1,730,580	1,746,603	1,755,392	1,767,538	1,775,101	1,748,279	1,742,843
Calhoun	13,038	13,101	13,286	13,491	13,636	14,011	14,192	14,545	14,688	14,309	14,546
Charlotte	142,357	145,481	149,486	152,865	158,006	153,788	161,731	165,061	166,473	166,298	166,023
Citrus	118,689	121,078	123,704	126,475	129,822	133,472	137,690	140,652	142,143	143,857	142,905
Clay	141,331	144,161	151,746	157,325	164,868	171,118	178,922	186,014	189,667	185,678	185,700
Collier	254,571	267,632	281,148	295,848	309,369	320,859	327,945	335,235	340,589	332,204	333,853
Columbia	56,683	57,354	58,537	59,218	60,821	61,744	64,052	65,658	66,429	67,161	67,273
Dade	2,262,902	2,292,316	2,320,465	2,354,404	2,388,138	2,432,276	2,442,170	2,466,645	2,478,585	2,477,019	2,477,658
Desoto	32,404	32,741	32,959	33,912	34,220	32,391	33,353	34,086	34,294	34,893	34,526
Dixie	13,883	14,154	14,530	14,768	15,054	15,482	15,715	15,826	15,927	16,080	16,205
Duval	782,691	797,566	813,817	829,937	843,772	865,965	883,875	900,608	908,378	908,562	899,820
Escambia	294,911	297,321	300,421	304,165	308,068	303,240	310,617	311,701	311,924	314,698	312,409
Flagler	50,620	53,881	58,004	62,511	71,004	80,559	90,663	94,199	96,912	95,214	96,099
Franklin	9,871	9,974	10,250	10,530	10,682	10,909	12,082	12,257	12,286	12,427	12,361
Gadsden	45,070	45,419	46,073	46,600	46,965	47,883	48,380	49,630	50,152	51,430	49,810
Gilchrist	14,533	14,759	15,140	15,637	16,016	16,303	16,812	17,171	17,375	17,502	17,618
Glades	10,595	10,624	10,675	10,759	10,763	10,743	10,849	11,113	11,301	11,520	11,338
Gulf	14,785	15,101	15,290	15,691	16,235	16,543	16,565	16,875	17,001	16,885	16,744
Hamilton	13,457	13,792	13,952	14,039	14,346	14,319	14,571	14,725	14,763	14,769	14,744
Hardee	26,952	27,021	27,474	27,434	27,898	27,277	27,240	27,574	27,650	28,359	28,282
Hendry	36,300	36,256	36,174	36,739	37,800	38,610	38,870	39,846	40,295	41,997	40,980
Hernando	131,298	133,497	137,613	141,574	146,118	152,049	158,441	163,035	165,329	166,850	165,758
Highlands	87,676	88,373	89,343	90,770	92,456	93,807	97,336	98,987	99,760	100,834	99,825
Hillsborough	1,005,808	1,034,164	1,062,140	1,085,318	1,114,774	1,137,583	1,171,585	1,197,312	1,209,978	1,202,309	1,200,754
Holmes	18,620	18,713	18,746	18,983	19,027	19,189	19,525	19,432	19,406	19,943	19,904
Indian River	113,755	116,291	118,884	121,887	127,831	130,849	136,546	140,469	142,452	141,926	142,108
Jackson	46,998	47,534	47,963	49,218	48,891	49,883	50,286	50,482	51,106	53,663	52,853
Jefferson	12,874	13,107	13,329	13,618	14,110	14,265	14,390	14,513	14,562	14,732	14,800

Table A. (Continued) Florida Population by Year and County, 2000-2010. (Source – Florida CHARTS; accessed February 2011)

County	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Lafayette	7,061	7,076	7,245	7,394	7,559	8,064	8,092	8,273	8,571	8,981	10,175
Lake	212,823	222,988	233,622	242,919	254,246	265,716	279,583	288,078	293,216	292,605	293,883
Lee	444,151	459,278	481,014	499,387	526,157	555,874	594,219	620,778	634,660	620,966	618,188
Leon	240,631	245,070	249,744	256,921	265,258	272,749	272,573	272,938	273,741	275,369	274,966
Levy	34,626	35,325	36,197	36,856	37,691	38,136	39,277	40,219	40,677	41,064	40,715
Liberty	7,045	7,145	7,165	7,248	7,372	7,623	7,784	7,763	7,767	8,580	8,221
Madison	18,775	18,878	18,974	19,183	19,564	19,738	19,846	19,960	20,018	20,266	20,285
Manatee	265,701	272,342	279,366	288,888	297,037	306,557	309,952	317,395	321,323	318,765	318,700
Marion	260,407	265,629	273,602	284,232	295,550	307,646	317,755	326,791	331,843	330,749	330,877
Martin	127,430	129,415	132,009	135,280	138,329	141,871	142,859	143,914	144,736	143,588	143,859
Monroe	79,721	80,850	81,030	80,473	81,336	82,628	80,055	78,729	78,157	75,213	78,003
Nassau	58,037	59,452	61,643	63,523	65,478	66,019	68,662	69,745	70,447	73,732	73,241
Okaloosa	171,264	174,228	178,036	182,020	186,744	189,766	193,668	197,164	198,884	196,622	197,043
Okeechobee	35,998	36,211	36,715	37,377	38,153	37,752	38,821	39,038	39,116	40,133	39,757
Orange	906,000	936,749	962,531	989,962	1,021,215	1,050,939	1,087,172	1,109,714	1,123,324	1,115,169	1,112,526
Osceola	174,107	182,202	197,901	213,723	228,755	237,659	259,521	267,510	273,266	277,731	273,931
Palm Beach	1,137,532	1,160,977	1,190,653	1,218,508	1,249,598	1,272,335	1,290,600	1,295,586	1,302,077	1,289,159	1,287,224
Pasco	346,882	354,196	364,900	378,085	392,507	410,758	427,594	435,913	441,188	437,880	440,616
Pinellas	923,308	930,602	935,274	941,435	944,966	948,925	947,122	942,911	940,645	932,909	926,217
Polk	487,183	498,011	504,381	514,247	531,472	545,064	570,067	583,315	589,784	584,978	584,058
Putnam	70,532	70,929	71,481	72,114	73,435	73,897	74,549	74,816	74,903	74,777	74,133
Saint Johns	124,613	129,880	135,467	141,216	151,114	159,168	167,553	175,521	179,857	186,142	186,841
Saint Lucie	194,062	199,390	205,396	213,614	228,480	243,061	263,319	273,868	279,469	274,460	275,298
Santa Rosa	118,605	122,252	125,947	129,842	134,761	137,245	142,004	142,094	142,991	145,579	145,550
Sarasota	328,135	335,428	341,784	350,664	360,214	370,123	381,828	388,641	392,262	391,997	389,770
Seminole	368,231	380,763	389,549	396,934	405,565	413,937	422,288	426,364	429,244	423,947	423,952
Sumter	54,203	58,083	61,979	63,522	67,221	75,660	84,687	90,996	94,125	96,033	100,392
Suwannee	35,091	35,744	35,815	37,479	37,863	38,319	39,008	39,816	40,773	42,181	43,908
Taylor	19,297	19,594	19,878	20,794	20,977	21,395	21,696	22,721	23,062	23,701	23,132
Union	13,473	13,660	13,786	13,793	14,752	15,135	15,160	15,865	16,112	16,157	15,705
Volusia	445,676	453,840	462,377	473,185	486,874	497,224	505,317	508,468	511,094	508,844	506,719
Wakulla	23,150	23,936	24,340	25,141	25,692	27,193	28,727	29,632	30,575	31,931	31,742
Walton	40,990	43,270	46,052	47,472	51,167	54,218	56,199	57,318	58,264	58,046	57,982
Washington	21,069	21,516	21,702	21,987	22,534	23,255	23,179	23,876	24,307	25,600	25,109

Table B. Florida Population by Age Group, 2010

Age Group	2010
<1	210,745
1-4	925,626
5-9	1,132,721
10-14	1,133,067
15-19	1,193,291
20-24	1,209,878
25-34	2,282,290
35-44	2,384,476
45-54	2,669,237
55-64	2,323,781
65-74	1,630,499
75-84	1,151,917
85+	541,267
Total	**18,788,795**

Table C. Florida Population by Gender, 2010

Gender	2010
Female	9,575,127
Male	9,213,668
Total	**18,788,795**

Table D. Florida Population by Race, Aggregated to White and Non-White, 2010

Race	2010
White	15,135,817
Black	3,106,660
Other Non-white	546,318
Total	18,788,795

List of Reportable Diseases and Conditions in Florida, 2010

Section 381.0031 (1) (2), Florida Statutes, provides that “Any practitioner, licensed in Florida to practice medicine, osteopathic medicine, chiropractic, naturopathy, or veterinary medicine, who diagnoses or suspects the existence of a disease of public health significance shall immediately report the fact to the Department of Health.” County health departments serve as the department’s representative in this reporting requirement. Furthermore, this statute provides that “Periodically the Department shall issue a list of diseases determined by it to be of public health significance…and shall furnish a copy of said list to the practitioners…”. This list reflects diseases and conditions that were reportable in 2010. Updates may be made in future years; Annual Morbidity Reports for subsequent years will reflect changes in the list.

Acquired Immune Deficiency Syndrome (AIDS)
Amebic encephalitis
Anthrax
Arsenic Poisoning
Botulism
Brucellosis
California serogroup virus (neuroinvasive and non-neuroinvasive)
Campylobacteriosis
Cancer (except non-melanoma skin cancer, and including benign and borderline intracranial and CNS tumors)
Carbon Monoxide Poisoning
Chancroid
Chlamydia
Cholera
Ciguatera fish poisoning (Ciguatera)
Congenital anomalies
Conjunctivitis (in neonates $\le$ 14 days old)
Creutzfeldt-Jakob Disease (CJD)
Cryptosporidiosis
Cyclosporiasis
Dengue
Diphtheria
Eastern equine encephalitis virus disease (neuroinvasive and non-neuroinvasive)
Ehrlichiosis/Anaplasmosis [human granulocytic (HGA), human monocytic (HME), human other or unspecified agent]
Encephalitis, other (non-arboviral)
Enteric diseases due to:
Escherichia coli, O157:H7
Escherichia coli, other pathogenic *E. coli* including entero-toxigenic, invasive, pathogenic, hemorrhagic, aggregative strains and shiga toxin positive strains
Giardiasis
Glanders
Gonorrhea
Granuloma Inguinale
Haemophilus influenzae (meningitis and invasive disease)
Hansen’s Disease (Leprosy)
Hantavirus infection
Hemolytic Uremic Syndrome
Hepatitis A
Hepatitis B, C, D, E, and G
Hepatitis B surface antigen (HBsAg) positive in a pregnant woman or a child $\le$ 24 months of age
Herpes Simplex Virus (HSV) [in Infants to 6 months of age; anogenital in children $\le$ 12 yrs]
Human Immunodeficiency Virus (HIV)
Human papillomavirus (HPV) [in children $\le$ 6 years; anogenital in children $\le$ 12 yrs, cancer associated strains]
Influenza due to novel or pandemic strains
Influenza-associated pediatric mortality (in persons aged < 18 yrs)
Lead Poisoning
Legionellosis
Leptospirosis
Listeriosis
Lyme Disease
Lymphogranuloma Venereum (LGV)
Malaria
Measles (Rubeola)
Melioidosis
Meningitis (bacterial, cryptococcal, mycotic)
Meningococcal Disease (includes meningitis and meningococcemia)
Mercury Poisoning
Mumps
Neurotoxic Shellfish Poisoning
Pertussis
Pesticide-related illness and injury
Plague
Poliomyelitis
Psittacosis (Ornithosis)
Q Fever
Rabies (human, animal)
Rabies (possible exposure)
Ricin toxicity
Rocky Mountain spotted fever
Rubella (including congenital)
St. Louis encephalitis (SLE) virus disease (neuroinvasive and non-neuroinvasive)
Salmonellosis
Saxitoxin Poisoning (including paralytic shellfish poisoning)
Severe Acute Respiratory Syndrome-associated *Coronavirus* (SARS-CoV) disease
Shigellosis
Smallpox
Staphylococcus aureus (with intermediate or full resistance to vancomycin, VISA, VRSA)
Staphylococcus aureus, methicilin resistant (MRSA), community associated mortalities
Staphylococcus enterotoxin B
Streptococcal Disease (invasive, Group A)
Streptococcus pneumoniae (invasive disease)
Syphilis
Tetanus
Toxoplasmosis (acute)
Trichinosis
Tuberculosis
Tularemia
Typhoid Fever
Typhus Fever (epidemic and endemic)
Vaccinia Disease
Varicella mortality
Venezuelan equine encephalitis virus disease (neuroinvasive and non-neuroinvasive)
Vibriosis (*Vibrio* infections)
Viral hemorrhagic fevers (Ebola, Marburg, Lassa, Machupo)
West Nile virus disease (neuroinvasive and non-neuroinvasive)
Western equine encephalitis virus disease (neuroinvasive and non-neuroinvasive)
Yellow Fever
Any disease outbreak
Any grouping or clustering

Selected Florida Department of Health Contacts

Division of Disease Control

Bureau of Epidemiology	(850) 245-4401 (accessible 24/7/365)
Bureau of Immunization	(850) 245-4342
Bureau of HIV/AIDS	(850) 245-4334
Bureau of Sexually Transmitted Disease Prevention and Control	(850) 245-4303
Bureau of Tuberculosis and Refugee Health	(850) 245-4350

Division of Environmental Health

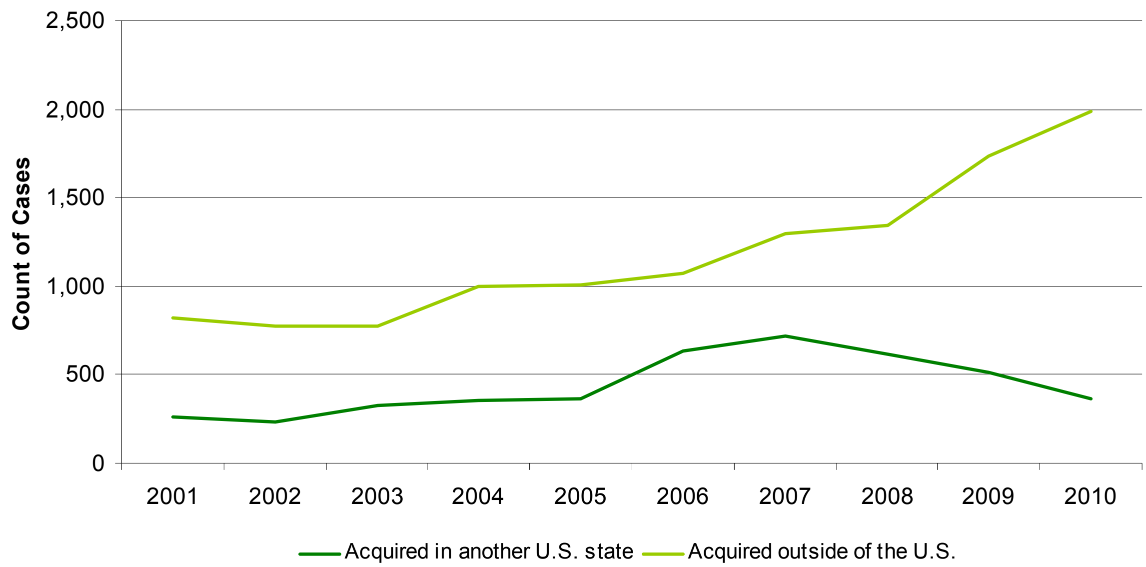
Bureau of Environmental Public Health Medicine	(850) 245-4277

Travel-Related Illness in Florida, Snapshot of Recent Trends

Reports of selected diseases and conditions are received by the Florida Department of Health from physicians and laboratories. Case reports for acute diseases excluding HIV, STDs, and tuberculosis (TB) are entered into the state's reportable disease surveillance system, Merlin, by county health departments. Data included in the summary below is limited to cases reported in Merlin. This is a snapshot of all cases aggregated at the state level with a focus on where the disease was acquired. The proportion of illnesses that are acquired in particular states, countries, or jurisdictions differs by disease and is often discussed more in-depth in the individual disease summaries included in Section 2 of this report. Additionally, importation of disease is a significant factor in the epidemiology of TB. TB is not discussed in this snapshot but is covered extensively in the TB summary contained in Section 2.

With the ease of international travel, as well as the large number of tourists that visit Florida each year, there is significant potential for the importation of disease to the state. Residents and non-residents alike are capable of introducing infectious diseases into Florida's population. Over the past ten years, the recorded number of cases of reportable disease where illness was determined to be acquired outside of Florida has risen steadily. However, when summarized by illness acquired domestically versus internationally it is apparent that the dramatic increase in non-Florida acquired illness is due to international travel (Figure 1). Illness associated with disease acquired in the U.S., but not in Florida has decreased over the past four years.

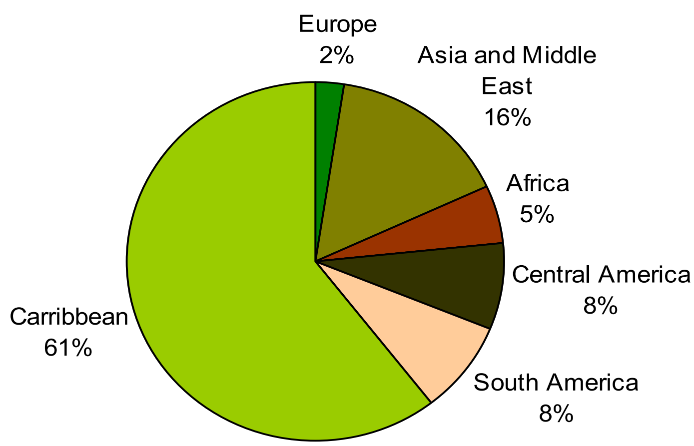
Figure 1. Cases of Reportable Disease in Florida Residents where Illness was Aquired Outside of the State of Florida, by Acquistion Location, 2001-2010



Common categories of travel include trips for pleasure and business. In addition to Florida residents who travel for pleasure or business, another category of international travel are those who travel to visit with friends and relatives (VFR). These populations are likely Florida residents whose family still resides in their country of origin. When visiting with family and friends, VFRs are likely to eat traditional foods, such as unpasteurized dairy products, which can pose a risk to their health. Additionally, VFRs are less likely to take certain precautions, such as taking anti-malarial medications, when traveling home because of a perceived lack of risk. Travel-related illness is also frequently associated with immigration. Florida is consistently ranked as one of the top six states in the U.S. Immigrants are screened for many infectious and chronic diseases upon entry into the country. All cases of reportable diseases are referred to the county health department and then reported as Florida residents.

For cases of reportable diseases captured in Merlin, in addition to the import status of the case, information about the country of origin is also entered. There were a total of 1,984 cases of a reportable disease reported in 2010 which were listed as being acquired outside of the U.S. The highest proportion of cases listed as acquired outside of the U.S. were imported from Cuba (N=640), Haiti (N=253), Puerto Rico (N=54), China (N=50), India (N=45), Mexico (N=45), and the Dominican Republic (N=41). Figure 2 groups countries into larger geographic regions.

Figure 2. Florida Cases or Reportable Diseases Acquired Outside of the U.S., by Region of Origin, 2010



Another area of significant morbidity are cases of infectious disease that are imported into Florida by a person who is traveling within the state but whose residence is outside of Florida. Because cases of reportable disease are classified according to the person's state of residence, cases of disease in travelers to Florida are not reflected in Florida's statistics and are not included in the other sections of this Annual Morbidity Statistics Report. It is estimated that over 82 million people visited Florida in 2010. Of those, approximately 71 million were from within the U.S., three million were from Canada, and eight million were from other international locations. These travelers may bring with them any number of infectious diseases. When ill individuals are identified, it is essential for public health to respond quickly and effectively to prevent continued transmission of the disease among other travelers as well as Florida residents. Measles is an example of a disease which commonly poses a threat to Florida residents from international travelers. Measles has become endemic in the United Kingdom and several other countries in Europe due to decreased numbers of individuals receiving vaccine.

Diseases which are commonly imported in travelers which require immediate public health action include measles, malaria, dengue, and *Brucella* (*melitensis* and *abortus* species) infections, to name a few. Specifically, malaria and dengue infections necessitate pesticide applications in the areas where the infected persons were near competent vectors. This reduces the risk that these diseases will be re-introduced to the state or to new areas of the state. For *Brucella melitensis* or *abortus* infections, it is essential to identify the travel history of individuals as well as establish other exposure information including livestock and unpasteurized cheese exposures. *Brucella melitensis* and *abortus* infections have been eliminated in Florida and would cause significant economic impact to commercial livestock if they were re-introduced in the state. Several examples of imported disease investigations are discussed in-depth in Section 5: Summary of Notable Outbreaks and Case Investigations. These summaries include cholera cases imported from Haiti after the January 2010 earthquake, an investigation of malaria in airline staff, which was acquired in Africa during a series of layovers, as well as measles in a traveler returning from Europe. However, the summaries in Section 5 do not cover all investigations that were conducted within the state associated with disease importation.

On January 12, 2010, an earthquake occurred near the Haitian capital of Port-au-Prince, creating enormous devastation. Florida's close proximity to Haiti resulted in >22,000 people entering Florida from Haiti as part of federal repatriation and humanitarian parolee efforts. Travel between Florida and Haiti is common and reportable diseases introduced by travelers returning from Haiti are identified every year. Because of the anticipated large post-earthquake influx of persons into Florida from Haiti, Florida enhanced surveillance efforts. Merlin was used to document cases of reportable diseases in people coming to Florida who were in Haiti at the time of or after the earthquake, regardless of residency. The Outbreak Module within Merlin was used to capture data on Haiti travel, medical condition upon entry into the U.S., and citizenship. During the post-earthquake period, 51 cases in Florida residents and 31 cases in non-Florida residents were recorded. Please see Section 5 under "Haiti" for a detailed breakdown of the diseases captured in Merlin related to the Haiti earthquake.

References

Florida Research Fact Sheet, available at: http://media.visitflorida.org/research.php.

Brucellosis Fact Sheet, Bureau of Environmental Public Health Medicine, available at: http://www.myfloridaeh.com/medicine/arboviral/Zoonoses/Zoonotic-brucellosis.html.

Migration Policy Institute. Immigration Facts. Published October 2004. Available at: http://www.migrationpolicy.org/Factsheet_102904.pdf.

Section 1

Tables of Selected Notifiable Diseases

Table 1.1. Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases, Florida, 2001-2010

Selected Notifiable Diseases	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome[1]	4,620	28.15	4,675	27.87	4,429	25.80	5,421	30.78	4,755	26.39	4,960	26.92	3,896	20.77	4,957	26.23	4,429	23.53	3,461	18.42
Campylobacteriosis	895	5.45	995	5.93	1,056	6.15	1,009	5.73	894	4.96	941	5.11	1,017	5.42	1,118	5.92	1,120	5.95	1,211	6.45
Chlamydia	37,625	229.25	42,058	250.76	42,381	246.92	42,554	241.60	43,372	240.71	48,955	265.74	57,580	306.90	70,751	374.41	72,937	387.57	74,745	397.82
Cryptosporidiosis	89	0.54	106	0.63	128	0.75	149	0.85	350	1.94	717	3.89	738	3.93	549	2.91	495	2.64	408	2.17
Cyclosporiasis	48	0.29	32	0.19	14	0.08	9	0.05	524	2.91	31	0.17	32	0.17	59	0.31	40	0.21	63	0.34
Escherichia coli, Shiga Toxin-Producing[2]	66	0.40	89	0.53	72	0.42	78	0.44	114	0.63	38	0.21	47	0.25	65	0.34	94	0.50	85	0.45
Giardiasis	1,150	7.01	1,318	7.86	1,132	6.60	1,126	6.39	987	5.48	1,165	6.32	1,268	6.76	1,391	7.36	1,981	10.53	2,139	11.38
Gonorrhea	21,531	131.19	21,348	127.28	18,974	110.54	18,580	105.49	20,225	112.25	23,976	130.15	23,308	124.23	23,237	122.97	20,879	110.95	20,166	107.33
Haemophilus influenzae, Invasive Disease[3]	70	0.43	82	0.49	99	0.58	99	0.56	117	0.65	142	0.77	127	0.68	162	0.86	222	1.18	191	27.73
Hepatitis A	847	5.16	1,056	6.30	399	2.32	295	1.67	289	1.60	233	1.26	171	0.91	165	0.87	191	1.01	178	1.02
Hepatitis B (+HBsAg) in Pregnant Women	437	13.35	631	19.17	555	16.45	599	17.51	530	15.16	448	12.66	644	18.03	599	16.93	598	17.06	438	0.95
Hepatitis B, Acute	502	3.06	543	3.24	631	3.68	527	2.99	510	2.83	446	2.42	366	1.95	358	1.89	318	1.69	315	12.62
Hepatitis C, Acute	43	0.26	76	0.45	69	0.40	53	0.30	39	0.22	49	0.27	46	0.25	53	0.28	77	0.41	105	1.68
Human Immunodeficiency Virus	5,917	36.05	6,602	39.36	6,198	36.11	5,987	33.99	5,514	30.6	5,224	28.36	6,235	33.23	7,588	40.16	5,608	29.8	5,211	0.56
Legionellosis	97	0.59	85	0.51	147	0.86	141	0.80	119	0.66	167	0.91	153	0.82	148	0.78	193	1.03	172	0.92
Listeriosis[4]	19	0.12	28	0.17	37	0.22	28	0.16	61	0.34	47	0.26	34	0.18	49	0.26	25	0.13	54	0.29
Lyme Disease	57	0.35	77	0.46	43	0.25	46	0.26	47	0.26	34	0.18	30	0.16	88	0.47	110	0.58	84	0.45
Malaria	61	0.37	76	0.45	92	0.54	93	0.53	68	0.38	61	0.33	56	0.30	65	0.34	93	0.49	139	0.74
Meningitis, Other	110	0.67	131	0.78	158	0.92	128	0.73	127	0.70	162	0.88	135	0.72	199	1.05	210	1.12	183	0.97
Meningococcal Disease[5]	124	0.76	128	0.76	106	0.62	107	0.61	84	0.47	79	0.43	67	0.36	51	0.27	52	0.28	60	0.32
Pertussis	30	0.18	53	0.32	113	0.66	132	0.75	208	1.15	228	1.24	211	1.12	314	1.66	497	2.64	328	1.75
Rabies, Animal	157	NA	181	NA	188	NA	205	NA	201	NA	176	NA	128	NA	144	NA	154	NA	130	NA
Rabies, Possible Exposure	1,100	6.70	1,082	6.45	1,051	6.12	1,128	6.40	1,215	6.74	1,244	6.75	1,474	7.86	1,618	8.56	1,853	9.85	2,114	11.25
Salmonellosis	3,104	18.91	4,651	27.73	4,669	27.20	4,276	24.28	5,552	30.81	4,928	26.75	5,022	26.77	5,312	28.11	6,741	35.82	6,281	33.43
Shigellosis	1,052	6.41	2,538	15.13	2,845	16.58	965	5.48	1,270	7.05	1,646	8.93	2,288	12.19	801	4.24	461	2.45	1,212	6.45
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	799	4.87	610	3.64	606	3.53	581	3.30	614	3.41	774	4.20	725	3.86	792	4.19	779	4.14	816	4.34
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	NR	-	NR	-	201	1.17	606	3.44	598	3.32	620	3.37	622	3.32	704	3.73	701	3.72	693	3.69
Streptococcal Disease, Invasive Group A	159	0.97	201	1.20	229	1.33	219	1.24	260	1.44	312	1.69	309	1.65	275	1.46	279	1.48	268	1.43
Syphilis	2,877	17.53	3,251	19.38	3,256	18.97	2,948	16.74	2,872	15.94	2,924	15.87	3,928	20.94	4,578	24.23	3,864	20.53	4,071	21.67
Toxoplasmosis	35	0.21	45	0.27	31	0.18	24	0.14	2	0.01	4	0.02	9	0.05	14	0.07	4	0.02	10	0.05
Tuberculosis	1,145	6.98	1,086	6.47	1,046	6.09	1,076	6.11	1,094	6.07	1,038	5.63	989	5.27	953	5.04	821	4.36	835	4.44
Varicella	NR	-	NR	-	NR	-	NR	-	NR	-	59	0.32	1,321	7.05	1,735	9.22	1,125	5.98	977	5.20
Vibrio Infections[6]	55	0.34	87	0.52	115	0.67	107	0.61	103	0.57	99	0.54	97	0.52	94	0.49	112	0.60	130	0.69
West Nile Virus Disease	11	0.07	36	0.21	93	0.54	45	0.26	22	0.12	3	0.02	3	0.02	3	0.02	3	0.02	12	0.06

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non-O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus*, *V. cholerae* non-O1, *V. fluvialis*, *V. hollisae*, *V. mimicus*, *V. parahaemolyticus*, *V. vulnificus*, and *V.* other.
NA - Not applicable; NR - Not Reportable

Table 1.2. Reported Confirmed and Probable Cases of Notifiable Diseases of Infrequent Occurrence, Florida, 2001-2010

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Amebic Encephalitis	NR	NR	NR	NR	NR	NR	NR	-	3	-
Anaplasmosis, Human Granulocytic	-	1	5	3	1	1	3	2	3	3
Anthrax	2	-	-	-	-	-	-	-	-	-
Botulism, Foodborne	-	-	-	-	-	1	-	-	-	-
Botulism, Infant	-	-	-	1	1	-	1	1	1	1
Botulism, Other	-	-	-	2	-	-	-	-	-	-
Botulism, Wound	-	-	-	-	-	-	-	-	-	-
Brucellosis	5	6	10	8	3	5	10	10	9	9
California Serogroup Virus	-	-	-	4	-	1	1	1	-	-
Chancroid	2	7	2	1	1	1	3	-	-	-
Ciguatera	13	7	7	4	10	32	29	53	49	20
Creutzfeldt-Jakob Disease (CJD)	NR	NR	4	14	17	14	12	23	15	13
Dengue Fever	12	21	16	13	19	20	46	33	55	195
Diphtheria	-	-	-	-	-	-	-	-	-	-
Eastern Equine Encephalitis	3	1	2	1	5	-	-	1	-	4
Ehrlichiosis, Human[1]	NR	NR	NR	NR	NR	NR	-	-	-	1
Ehrlichiosis, Human Monocytic	8	4	8	4	4	5	18	10	11	10
Encephalitis, Other	12	20	10	8	8	5	18	5	27	15
Glanders	NR	NR	-	-	-	-	-	-	-	-
Granuloma inguinale	-	-	-	-	-	-	-	-	-	-
Hantavirus Infection	-	-	-	-	-	-	-	-	-	-
Hemolytic Uremic Syndrome	5	5	6	6	20	5	6	5	5	8
Hemorrhagic Fever	-	-	-	-	-	-	-	-	-	-
Hepatitis B, Perinatal	7	6	2	-	2	6	2	3	-	1
Hepatitis Non-A or B	6	8	4	8	5	36	NR	NR	NR	-
Hepatitis Unspecified, Acute	6	1	3	-	2	2	NR	NR	NR	-
Hepatitis D	NR	NR	NR	NR	NR	NR	1	-	1	-
Hepatitis E	NR	NR	NR	NR	NR	NR	1	-	2	1
Hepatitis G	NR	NR	NR	NR	NR	NR	-	-	1	-
Leprosy (Hansen's disease)	1	4	9	5	2	7	10	10	7	12
Leptospirosis	1	-	1	1	2	2	1	-	1	2
Lymphogranuloma venereum	2	4	2	-	3	-	-	-	-	-

1 Includes codes for human ehrlichiosis (NR after 1999), ehrlichiosis caused by *E. ewingii*, and ehrlichiosis unspecified.
NR - Not Reportable

Table 1.2. (Continued) Reported Confirmed and Probable Cases of Notifiable Diseases of Infrequent Occurrence, Florida, 2001-2010

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Measles	-	3	-	1	-	4	5	1	5	1
Melioidosis	NR	NR	-	-	1	1	-	-	-	-
Meningitis, Group B *Streptococcus*	18	19	15	15	23	23	30	11	NR	NR
Mumps	8	7	7	9	8	15	21	16	18	10
Neurotoxic Shellfish Poisoning	-	-	-	-	4	16	1	-	-	-
Plague	-	-	-	-	-	-	-	-	-	-
Poliomyelitis	-	-	-	-	-	-	-	-	-	-
Psittacosis	1	3	3	1	-	1	-	2	-	-
Q Fever	1	2	6	2	1	8	2	1	1	2
Rabies, Human	-	-	-	1	-	-	-	-	-	-
Ricin Toxin	NR	NR	-	-	-	-	-	-	-	-
Rocky Mountain Spotted Fever	8	15	17	22	14	21	19	19	10	13
Rubella	3	5	-	-	-	1	-	3	-	-
Rubella, Congenital	-	-	-	-	-	-	-	-	-	-
Saxitoxin Poisoning	-	-	-	1	-	-	-	-	-	-
Smallpox	-	-	-	-	-	-	-	-	-	-
St. Louis Encephalitis	-	1	-	-	-	-	-	-	-	-
Staphylococcus aureus (GISA/VISA)	-	-	-	-	-	-	1	3	6	1
Staphylococcus aureus (GRSA/VRSA)	-	-	-	-	-	-	-	-	-	-
Staphylococcus Enterotoxin B	NR	NR	-	-	-	-	-	2	-	-
Tetanus	3	3	3	4	3	2	5	2	-	5
Trichinosis	-	-	-	-	1	1	-	1	-	-
Tularemia	-	-	-	-	1	-	-	-	-	-
Typhoid Fever	12	19	15	10	11	16	15	18	19	22
Typhus Fever	-	-	-	1	-	2	1	-	1	-
Vaccinia Disease	-	-	1	-	-	-	-	-	-	-
Venezuelan Equine Encephalitis	-	-	-	-	-	-	-	-	-	-
Vibrio cholerae Type O1	-	-	-	-	-	-	-	1	-	4
Western Equine Encephalitis	-	-	-	-	-	-	-	-	-	-
Yellow Fever	-	-	-	-	-	-	-	-	-	-

NR - Not Reportable

Table 1.3. Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by County of Residence, Florida, 2010

Selected Notifiable Diseases	Alachua County		Baker County		Bay County		Bradford County		Brevard County		Broward County		Calhoun County	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	36	13.97	6	23.13	18	10.57	2	6.81	41	7.39	631	36.21	-	0.00
Campylobacteriosis	22	8.54	4	15.42	4	2.35	2	6.81	27	4.87	107	6.14	-	0.00
Chlamydia	1,694	657.20	115	443.40	731	429.07	148	504.00	1,584	285.45	6,956	399.12	47	323.11
Cryptosporidiosis	8	3.10	-	0.00	14	8.22	1	3.41	8	1.44	22	1.26	1	6.87
Cyclosporiasis	-	0.00	-	0.00	-	0.00	-	0.00	3	0.54	5	0.29	-	0.00
Escherichia coli, Shiga Toxin-Producing[1]	2	0.78	-	0.00	-	0.00	-	0.00	2	0.36	12	0.69	-	0.00
Giardiasis	22	8.54	5	19.28	15	8.80	6	20.43	25	4.51	148	8.49	2	13.75
Gonorrhea	487	188.93	23	88.68	197	115.63	21	71.51	337	60.73	2,146	123.13	14	96.25
Haemophilus influenzae, Invasive[2]	1	0.39	-	0.00	1	0.59	2	6.81	-	0.00	16	0.92	1	6.87
Hepatitis A	4	1.55	-	0.00	1	0.59	-	0.00	5	0.90	25	1.43	-	0.00
Hepatitis B (+HBsAg) in Pregnant Women[3]	12	17.97	1	22.25	1	3.29	1	22.31	7	7.73	49	14.07	-	0.00
Hepatitis B, Acute	3	1.16	-	0.00	2	1.17	2	6.81	5	0.90	18	1.03	-	0.00
Hepatitis C, Acute	1	0.39	-	0.00	2	1.17	-	0.00	-	0.00	7	0.40	-	0.00
Human Immunodeficiency Virus	50	19.40	8	30.85	23	13.50	5	17.03	64	11.53	882	50.61	2	13.75
Legionellosis	-	0.00	1	3.86	3	1.76	-	0.00	3	0.54	19	1.09	-	0.00
Listeriosis[4]	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	4	0.23	-	0.00
Lyme Disease	1	0.39	-	0.00	-	0.00	-	0.00	3	0.54	3	0.17	-	0.00
Malaria	2	0.78	-	0.00	-	0.00	-	0.00	2	0.36	25	1.43	-	0.00
Meningitis, Other (bacterial, cryptococcal, mycotic)	2	0.78	-	0.00	-	0.00	-	0.00	-	0.00	19	1.09	-	0.00
Meningococcal Disease[5]	-	0.00	-	0.00	-	0.00	-	0.00	3	0.54	8	0.46	1	6.87
Pertussis	4	1.55	1	3.86	-	0.00	-	0.00	5	0.90	11	0.63	1	6.87
Rabies, Possible Exposure	59	22.89	3	11.57	61	35.81	5	17.03	64	11.53	4	0.23	-	0.00
Salmonellosis	65	25.22	5	19.28	143	83.94	6	20.43	240	43.25	443	25.42	13	89.37
Shigellosis	29	11.25	6	23.13	-	0.00	-	0.00	4	0.72	195	11.19	-	0.00
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	11	4.27	-	0.00	9	5.28	2	6.81	26	4.69	69	3.96	-	0.00
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	12	4.66	-	0.00	8	4.70	-	0.00	34	6.13	65	3.73	1	6.87
Streptococcal Disease, Invasive Group A	7	2.72	3	11.57	4	2.35	-	0.00	13	2.34	27	1.55	-	0.00
Syphilis	28	10.86	2	7.71	5	2.93	-	0.00	38	6.85	790	45.33	2	13.75
Toxoplasmosis	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Tuberculosis	8	3.10	-	0.00	4	2.35	1	3.41	10	1.80	69	3.96	-	0.00
Varicella	10	3.88	4	15.42	3	1.76	-	0.00	2	0.36	40	2.30	-	0.00
Vibrio Infections[6]	-	0.00	-	0.00	2	1.17	-	0.00	7	1.26	10	0.57	-	0.00
West Nile Virus Disease	-	0.00	-	0.00	-	0.00	-	0.00	1	0.18	1	0.06	-	0.00

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non-O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus*, *V. cholerae* non-O1, *V. fluvialis*, *V. hollisae*, *V. mimicus*, *V. parahaemolyticus*, *V. vulnificus*, and *V.* other.

Table 1.3. (Continued) Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by County of Residence, Florida, 2010

Selected Notifiable Diseases	Charlotte County		Citrus County		Clay County		Collier County		Columbia County		DeSoto County		Dixie County	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	10	6.02	5	3.50	19	10.23	24	7.19	7	10.41	9	26.07	2	12.34
Campylobacteriosis	24	14.46	4	2.80	11	5.92	60	17.97	8	11.89	-	0.00	3	18.51
Chlamydia	304	183.11	317	221.83	613	330.10	673	201.59	291	432.57	124	359.15	69	425.79
Cryptosporidiosis	-	0.00	3	2.10	13	7.00	9	2.70	2	2.97	-	0.00	-	0.00
Cyclosporiasis	1	0.60	-	0.00	-	0.00	7	2.10	-	0.00	-	0.00	-	0.00
Escherichia coli, Shiga Toxin-Producing[1]	-	0.00	1	0.70	-	0.00	4	1.20	-	0.00	-	0.00	-	0.00
Giardiasis	9	5.42	4	2.80	22	11.85	49	14.68	16	23.78	4	11.59	3	18.51
Gonorrhea	32	19.27	73	51.08	106	57.08	71	21.27	63	93.65	14	40.55	29	178.96
Haemophilus influenzae, Invasive[2]	2	1.20	2	1.40	2	1.08	2	0.60	1	1.49	-	0.00	-	0.00
Hepatitis A	1	0.60	-	0.00	2	1.08	2	0.60	-	0.00	-	0.00	2	12.34
Hepatitis B (+HBsAg) in Pregnant Women[3]	-	0.00	1	5.60	3	8.16	16	31.84	1	8.99	-	0.00	-	0.00
Hepatitis B, Acute	2	1.20	2	1.40	3	1.62	3	0.90	2	2.97	-	0.00	-	0.00
Hepatitis C, Acute	1	0.60	5	3.50	-	0.00	4	1.20	-	0.00	-	0.00	2	12.34
Human Immunodeficiency Virus	17	10.24	8	5.60	21	11.31	41	12.28	4	5.95	12	34.76	-	0.00
Legionellosis	1	0.60	1	0.70	1	0.54	1	0.30	-	0.00	-	0.00	-	0.00
Listeriosis[4]	2	1.20	-	0.00	-	0.00	1	0.30	-	0.00	-	0.00	-	0.00
Lyme Disease	2	1.20	2	1.40	-	0.00	1	0.30	-	0.00	-	0.00	-	0.00
Malaria	1	0.60	2	1.40	-	0.00	4	1.20	-	0.00	-	0.00	-	0.00
Meningitis, Other (bacterial, cryptococcal, mycotic)	1	0.60	-	0.00	1	0.54	6	1.80	-	0.00	-	0.00	-	0.00
Meningococcal Disease[5]	-	0.00	1	0.70	-	0.00	2	0.60	-	0.00	-	0.00	-	0.00
Pertussis	1	0.60	-	0.00	7	3.77	6	1.80	-	0.00	1	2.90	1	6.17
Rabies, Possible Exposure	36	21.68	35	24.49	31	16.69	56	16.77	4	5.95	2	5.79	-	0.00
Salmonellosis	51	30.72	59	41.29	105	56.54	134	40.14	38	56.49	5	14.48	3	18.51
Shigellosis	10	6.02	-	0.00	10	5.39	2	0.60	2	2.97	-	0.00	-	0.00
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	6	3.61	10	7.00	2	1.08	13	3.89	3	4.46	1	2.90	1	6.17
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	3	1.81	13	9.10	2	1.08	12	3.59	5	7.43	-	0.00	1	6.17
Streptococcal Disease, Invasive Group A	3	1.81	2	1.40	4	2.15	7	2.10	1	1.49	-	0.00	-	0.00
Syphilis	5	3.01	6	4.20	7	3.77	27	8.09	4	5.95	5	14.48	3	18.51
Toxoplasmosis	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Tuberculosis	1	0.60	3	2.10	4	2.15	33	9.88	1	1.49	3	8.69	-	0.00
Varicella	7	4.22	14	9.80	12	6.46	40	11.98	4	5.95	-	0.00	-	0.00
Vibrio Infections[6]	-	0.00	1	0.70	-	0.00	3	0.90	-	0.00	-	0.00	-	0.00
West Nile Virus Disease	-	0.00	-	0.00	-	0.00	2	0.60	-	0.00	1	2.90	-	0.00

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non-O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus*, *V. cholerae* non-O1, *V. fluvialis*, *V. hollisae*, *V. mimicus*, *V. parahaemolyticus*, *V. vulnificus*, and *V.* other.

Table 1.3. (Continued) Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by County of Residence, Florida, 2010

Selected Notifiable Diseases	Duval County		Escambia County		Flagler County		Franklin County		Gadsden County		Gilchrist County		Glades County	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	207	23.00	47	15.04	6	6.24	-	0.00	12	24.09	2	11.35	-	0.00
Campylobacteriosis	50	5.56	30	9.60	3	3.12	-	0.00	2	4.02	1	5.68	4	35.28
Chlamydia	5,745	638.46	1,655	529.75	287	298.65	52	420.68	534	1,072.07	48	272.45	42	370.44
Cryptosporidiosis	39	4.33	3	0.96	-	0.00	-	0.00	1	2.01	3	17.03	-	0.00
Cyclosporiasis	1	0.11	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Escherichia coli, Shiga Toxin-Producing[1]	4	0.44	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Giardiasis	118	13.11	16	5.12	3	3.12	2	16.18	1	2.01	2	11.35	-	0.00
Gonorrhea	1,896	210.71	527	168.69	48	49.95	19	153.71	178	357.36	8	45.41	7	61.74
Haemophilus influenzae, Invasive[2]	10	1.11	4	1.28	1	1.04	-	0.00	-	0.00	3	17.03	-	0.00
Hepatitis A	2	0.22	-	0.00	-	0.00	-	0.00	1	2.01	1	5.68	-	0.00
Hepatitis B (+HBsAg) in Pregnant Women[3]	38	20.16	5	7.88	1	7.56	1	60.98	1	9.96	-	0.00	-	0.00
Hepatitis B, Acute	10	1.11	2	0.64	3	3.12	1	8.09	-	0.00	1	5.68	1	8.82
Hepatitis C, Acute	1	0.11	-	0.00	-	0.00	-	0.00	-	0.00	1	5.68	-	0.00
Human Immunodeficiency Virus	298	33.12	78	24.97	10	10.41	-	0.00	18	36.14	-	0.00	3	26.46
Legionellosis	11	1.22	1	0.32	-	0.00	-	0.00	1	2.01	-	0.00	-	0.00
Listeriosis[4]	1	0.11	3	0.96	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Lyme Disease	4	0.44	1	0.32	1	1.04	-	0.00	1	2.01	1	5.68	-	0.00
Malaria	6	0.67	3	0.96	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Meningitis, Other (bacterial, cryptococcal, mycotic)	12	1.33	6	1.92	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Meningococcal Disease[5]	1	0.11	1	0.32	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Pertussis	41	4.56	6	1.92	2	2.08	-	0.00	-	0.00	-	0.00	-	0.00
Rabies, Possible Exposure	53	5.89	62	19.85	12	12.49	1	8.09	6	12.05	-	0.00	4	35.28
Salmonellosis	484	53.79	96	30.73	12	12.49	3	24.27	15	30.11	10	56.76	7	61.74
Shigellosis	169	18.78	3	0.96	1	1.04	-	0.00	5	10.04	1	5.68	-	0.00
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	41	4.56	26	8.32	6	6.24	-	0.00	1	2.01	3	17.03	-	0.00
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	26	2.89	31	9.92	4	4.16	1	8.09	3	6.02	4	22.70	-	0.00
Streptococcal Disease, Invasive Group A	12	1.33	6	1.92	-	0.00	2	16.18	-	0.00	2	11.35	-	0.00
Syphilis	211	23.45	70	22.41	6	6.24	1	8.09	10	20.08	2	11.35	4	35.28
Toxoplasmosis	2	0.22	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Tuberculosis	72	8.00	14	4.48	2	2.08	-	0.00	9	18.07	-	0.00	-	0.00
Varicella	63	7.00	36	11.52	5	5.20	-	0.00	1	2.01	-	0.00	-	0.00
Vibrio Infections[6]	1	0.11	3	0.96	-	0.00	-	0.00	1	2.01	-	0.00	-	0.00
West Nile Virus Disease	1	0.11	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non-O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus*, *V. cholerae* non-O1, *V. fluvialis*, *V. hollisae*, *V. mimicus*, *V. parahaemolyticus*, *V. vulnificus*, and *V.* other.

Table 1.3. (Continued) Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by County of Residence, Florida, 2010

Selected Notifiable Diseases	Gulf County		Hamilton County		Hardee County		Hendry County		Hernando County		Highlands County		Hillsborough County	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	-	0.00	1	6.78	1	3.54	3	7.32	5	3.02	7	7.01	193	16.07
Campylobacteriosis	2	11.94	1	6.78	4	14.14	8	19.52	1	0.60	2	2.00	76	6.33
Chlamydia	50	298.61	131	888.50	88	311.15	197	480.72	350	211.15	311	311.55	7020	584.63
Cryptosporidiosis	-	0.00	-	0.00	1	3.54	1	2.44	3	1.81	-	0.00	14	1.17
Cyclosporiasis	-	0.00	-	0.00	-	0.00	-	0.00	1	0.60	1	1.00	3	0.25
Escherichia coli, Shiga Toxin-Producing[1]	-	0.00	-	0.00	-	0.00	-	0.00	1	0.60	1	1.00	8	0.67
Giardiasis	-	0.00	2	13.56	4	14.14	5	12.20	7	4.22	4	4.01	100	8.33
Gonorrhea	4	23.89	17	115.30	9	31.82	27	65.89	50	30.16	68	68.12	1,951	162.48
Haemophilus influenzae, Invasive[2]	-	0.00	-	0.00	1	3.54	-	0.00	3	1.81	4	4.01	11	0.92
Hepatitis A	-	0.00	-	0.00	1	3.54	1	2.44	-	0.00	1	1.00	6	0.50
Hepatitis B (+HBsAg) in Pregnant Women[3]	-	0.00	1	44.33	1	19.45	-	0.00	1	4.35	1	7.65	40	15.98
Hepatitis B, Acute	-	0.00	1	6.78	1	3.54	-	0.00	4	2.41	2	2.00	49	4.08
Hepatitis C, Acute	-	0.00	-	0.00	-	0.00	1	2.44	1	0.60	1	1.00	12	1.00
Human Immunodeficiency Virus	3	17.92	1	6.78	3	10.61	3	7.32	10	6.03	11	11.02	347	28.90
Legionellosis	-	0.00	-	0.00	-	0.00	-	0.00	2	1.21	2	2.00	7	0.58
Listeriosis[4]	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	2	0.17
Lyme Disease	-	0.00	-	0.00	-	0.00	-	0.00	1	0.60	2	2.00	4	0.33
Malaria	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	5	0.42
Meningitis, Other (bacterial, cryptococcal, mycotic)	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	1	1.00	28	2.33
Meningococcal Disease[5]	-	0.00	-	0.00	-	0.00	-	0.00	1	0.60	-	0.00	1	0.08
Pertussis	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	31	2.58
Rabies, Possible Exposure	2	11.94	2	13.56	11	38.89	5	12.20	33	19.91	15	15.03	55	4.58
Salmonellosis	13	77.64	5	33.91	10	35.36	17	41.48	36	21.72	22	22.04	302	25.15
Shigellosis	-	0.00	-	0.00	1	3.54	15	36.60	4	2.41	5	5.01	134	11.16
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	1	5.97	-	0.00	3	10.61	2	4.88	12	7.24	6	6.01	60	5.00
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	1	5.97	-	0.00	1	3.54	-	0.00	9	5.43	9	9.02	45	3.75
Streptococcal Disease, Invasive Group A	-	0.00	-	0.00	1	3.54	-	0.00	1	0.60	2	2.00	20	1.67
Syphilis	5	29.86	3	20.35	2	7.07	-	0.00	11	6.64	3	3.01	352	29.31
Toxoplasmosis	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	4	0.33
Tuberculosis	-	0.00	2	13.56	4	14.14	5	12.20	1	0.60	2	2.00	86	7.16
Varicella	1	5.97	-	0.00	6	21.21	5	12.20	10	6.03	5	5.01	48	4.00
Vibrio Infections[6]	2	11.94	-	0.00	-	0.00	-	0.00	3	1.81	-	0.00	12	1.00
West Nile Virus Disease	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	1	1.00	-	0.00

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non-O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus*, *V. cholerae* non-O1, *V. fluvialis*, *V. hollisae*, *V. mimicus*, *V. parahaemolyticus*, *V. vulnificus*, and *V.* other.

Table 1.3. (Continued) Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by County of Residence, Florida, 2010

Selected Notifiable Diseases	Holmes County		Indian River County		Jackson County		Jefferson County		Lafayette County		Lake County		Lee County	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	1	5.02	11	7.74	7	13.24	-	0.00	-	0.00	21	7.15	76	12.29
Campylobacteriosis	2	10.05	14	9.85	2	3.78	-	0.00	2	19.66	10	3.40	50	8.09
Chlamydia	80	401.93	421	296.25	236	446.52	86	581.08	18	176.90	877	298.42	1,916	309.94
Cryptosporidiosis	-	0.00	9	6.33	2	3.78	-	0.00	-	0.00	8	2.72	54	8.74
Cyclosporiasis	-	0.00	1	0.70	-	0.00	-	0.00	-	0.00	1	0.34	2	0.32
Escherichia coli, Shiga Toxin-Producing[1]	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	1	0.34	1	0.16
Giardiasis	-	0.00	11	7.74	2	3.78	2	13.51	-	0.00	26	8.85	39	6.31
Gonorrhea	7	35.17	68	47.85	64	121.09	28	189.19	1	9.83	265	90.17	435	70.37
Haemophilus influenzae, Invasive[2]	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	7	2.38	1	0.16
Hepatitis A	-	0.00	2	1.41	-	0.00	-	0.00	1	9.83	-	0.00	3	0.49
Hepatitis B (+HBsAg) in Pregnant Women[3]	-	0.00	4	20.01	-	0.00	-	0.00	-	0.00	4	9.06	7	7.46
Hepatitis B, Acute	-	0.00	4	2.81	-	0.00	-	0.00	-	0.00	1	0.34	9	1.46
Hepatitis C, Acute	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	1	0.34	1	0.16
Human Immunodeficiency Virus	2	10.05	23	16.18	6	11.35	1	6.76	-	0.00	38	12.93	90	14.56
Legionellosis	-	0.00	1	0.70	-	0.00	-	0.00	-	0.00	1	0.34	12	1.94
Listeriosis[4]	-	0.00	1	0.70	-	0.00	-	0.00	-	0.00	-	0.00	1	0.16
Lyme Disease	-	0.00	1	0.70	-	0.00	-	0.00	-	0.00	1	0.34	8	1.29
Malaria	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	1	0.34	1	0.16
Meningitis, Other (bacterial, cryptococcal, mycotic)	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	3	1.02	7	1.13
Meningococcal Disease[5]	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	2	0.68	1	0.16
Pertussis	-	0.00	-	0.00	1	1.89	-	0.00	1	9.83	2	0.68	29	4.69
Rabies, Possible Exposure	5	25.12	27	19.00	-	0.00	-	0.00	1	9.83	48	16.33	142	22.97
Salmonellosis	6	30.14	52	36.59	5	9.46	6	40.54	1	9.83	163	55.46	277	44.81
Shigellosis	1	5.02	1	0.70	2	3.78	4	27.03	-	0.00	9	3.06	80	12.94
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	1	5.02	9	6.33	1	1.89	2	13.51	-	0.00	25	8.51	26	4.21
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	3	15.07	3	2.11	1	1.89	-	0.00	-	0.00	19	6.47	31	5.01
Streptococcal Disease, Invasive Group A	2	10.05	2	1.41	-	0.00	-	0.00	-	0.00	7	2.38	3	0.49
Syphilis	1	5.02	13	9.15	6	11.35	1	6.76	-	0.00	13	4.42	74	11.97
Toxoplasmosis	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Tuberculosis	-	0.00	3	2.11	5	9.46	-	0.00	-	0.00	6	2.04	26	4.21
Varicella	7	35.17	9	6.33	6	11.35	1	6.76	-	0.00	19	6.47	99	16.01
Vibrio Infections[6]	-	0.00	2	1.41	-	0.00	1	6.76	-	0.00	-	0.00	3	0.49
West Nile Virus Disease	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	1	0.16

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non-O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus*, *V. cholerae* non-O1, *V. fluvialis*, *V. hollisae*, *V. mimicus*, *V. parahaemolyticus*, *V. vulnificus*, and *V.* other.

Table 1.3. (Continued) Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by County of Residence, Florida, 2010

Selected Notifiable Diseases	Leon County		Levy County		Liberty County		Madison County		Manatee County		Marion County		Martin County	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	43	15.64	6	14.74	-	0.00	2	9.86	26	8.16	17	5.14	9	6.26
Campylobacteriosis	17	6.18	4	9.82	-	0.00	-	0.00	16	5.02	13	3.93	25	17.38
Chlamydia	2,834	1,030.67	180	442.10	26	316.26	118	581.71	1,208	379.04	1,293	390.78	324	225.22
Cryptosporidiosis	4	1.45	3	7.37	-	0.00	-	0.00	10	3.14	4	1.21	6	4.17
Cyclosporiasis	2	0.73	-	0.00	-	0.00	-	0.00	3	0.94	1	0.30	1	0.70
Escherichia coli, Shiga Toxin-Producing[1]	1	0.36	1	2.46	-	0.00	-	0.00	-	0.00	1	0.30	1	0.70
Giardiasis	33	12.00	7	17.19	-	0.00	-	0.00	21	6.59	25	7.56	15	10.43
Gonorrhea	928	337.50	34	83.51	8	97.31	50	246.49	295	92.56	318	96.11	52	36.15
Haemophilus influenzae, Invasive[2]	2	0.73	-	0.00	-	0.00	-	0.00	6	1.88	7	2.12	-	0.00
Hepatitis A	1	0.36	-	0.00	-	0.00	-	0.00	1	0.31	5	1.51	3	2.09
Hepatitis B (+HBsAg) in Pregnant Women[3]	7	9.41	1	14.42	-	0.00	-	0.00	13	25.18	5	9.69	-	0.00
Hepatitis B, Acute	-	0.00	1	2.46	-	0.00	-	0.00	18	5.65	10	3.02	1	0.70
Hepatitis C, Acute	-	0.00	-	0.00	-	0.00	-	0.00	1	0.31	2	0.60	2	1.39
Human Immunodeficiency Virus	88	32.00	5	12.28	2	24.33	6	29.58	53	16.63	35	10.58	14	9.73
Legionellosis	1	0.36	1	2.46	-	0.00	-	0.00	4	1.26	1	0.30	1	0.70
Listeriosis[4]	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Lyme Disease	-	0.00	1	2.46	-	0.00	-	0.00	-	0.00	5	1.51	4	2.78
Malaria	1	0.36	-	0.00	-	0.00	-	0.00	2	0.63	-	0.00	-	0.00
Meningitis, Other (bacterial, cryptococcal, mycotic)	-	0.00	-	0.00	-	0.00	-	0.00	2	0.63	4	1.21	1	0.70
Meningococcal Disease[5]	-	0.00	-	0.00	-	0.00	-	0.00	5	1.57	2	0.60	-	0.00
Pertussis	2	0.73	1	2.46	-	0.00	-	0.00	3	0.94	2	0.60	1	0.70
Rabies, Possible Exposure	28	10.18	6	14.74	-	0.00	1	4.93	58	18.20	44	13.30	34	23.63
Salmonellosis	103	37.46	12	29.47	-	0.00	-	0.00	99	31.06	110	33.24	49	34.06
Shigellosis	25	9.09	-	0.00	-	0.00	-	0.00	43	13.49	5	1.51	2	1.39
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	6	2.18	2	4.91	-	0.00	-	0.00	16	5.02	10	3.02	7	4.87
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	7	2.55	5	12.28	-	0.00	-	0.00	15	4.71	15	4.53	5	3.48
Streptococcal Disease, Invasive Group A	2	0.73	-	0.00	-	0.00	-	0.00	8	2.51	6	1.81	1	0.70
Syphilis	52	18.91	2	4.91	-	0.00	3	14.79	17	5.33	29	8.76	6	4.17
Toxoplasmosis	-	0.00	-	0.00	-	0.00	-	0.00	1	0.31	-	0.00	-	0.00
Tuberculosis	7	2.55	1	2.46	-	0.00	1	4.93	17	5.33	7	2.12	7	4.87
Varicella	3	1.09	1	2.46	-	0.00	-	0.00	19	5.96	7	2.12	22	15.29
Vibrio Infections[6]	7	2.55	-	0.00	-	0.00	-	0.00	2	0.63	1	0.30	1	0.70
West Nile Virus Disease	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non-O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus*, *V. cholerae* non-O1, *V. fluvialis*, *V. hollisae*, *V. mimicus*, *V. parahaemolyticus*, *V. vulnificus*, and *V.* other.

Table 1.3. (Continued) Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by County of Residence, Florida, 2010

Selected Notifiable Diseases	Miami-Dade County		Monroe County		Nassau County		Okaloosa County		Okeechobee County		Orange County		Osceola County	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	728	29.38	24	30.77	7	9.56	5	2.54	5	12.58	296	26.61	43	15.70
Campylobacteriosis	191	7.71	4	5.13	11	15.02	11	5.58	-	0.00	32	2.88	12	4.38
Chlamydia	8,656	349.36	152	194.86	212	289.46	810	411.08	184	462.81	6,095	547.85	1,113	406.31
Cryptosporidiosis	23	0.93	-	0.00	1	1.37	1	0.51	1	2.52	31	2.79	5	1.83
Cyclosporiasis	1	0.04	-	0.00	1	1.37	1	0.51	-	0.00	10	0.90	-	0.00
Escherichia coli, Shiga Toxin-Producing[1]	19	0.77	-	0.00	-	0.00	2	1.02	-	0.00	6	0.54	-	0.00
Giardiasis	810	32.69	11	14.10	7	9.56	9	4.57	11	27.67	101	9.08	19	6.94
Gonorrhea	2,445	98.68	28	35.90	33	45.06	113	57.35	24	60.37	1,675	150.56	186	67.90
Haemophilus influenzae, Invasive[2]	27	1.09	-	0.00	-	0.00	-	0.00	3	7.55	9	0.81	1	0.37
Hepatitis A	49	1.98	-	0.00	-	0.00	-	0.00	1	2.52	20	1.80	4	1.46
Hepatitis B (+HBsAg) in Pregnant Women[3]	34	6.71	-	0.00	-	0.00	8	21.00	-	0.00	45	18.05	4	7.00
Hepatitis B, Acute	27	1.09	1	1.28	5	6.83	-	0.00	1	2.52	16	1.44	10	3.65
Hepatitis C, Acute	-	0.00	-	0.00	1	1.37	-	0.00	-	0.00	10	0.90	1	0.37
Human Immunodeficiency Virus	1,242	50.13	21	26.92	9	12.29	14	7.11	1	2.52	485	43.59	85	31.03
Legionellosis	14	0.57	1	1.28	1	1.37	-	0.00	-	0.00	16	1.44	2	0.73
Listeriosis[4]	14	0.57	1	1.28	-	0.00	1	0.51	-	0.00	6	0.54	-	0.00
Lyme Disease	6	0.24	1	1.28	-	0.00	1	0.51	-	0.00	4	0.36	1	0.37
Malaria	35	1.41	-	0.00	-	0.00	1	0.51	-	0.00	17	1.53	3	1.10
Meningitis, Other (bacterial, cryptococcal, mycotic)	21	0.85	-	0.00	1	1.37	3	1.52	1	2.52	12	1.08	-	0.00
Meningococcal Disease[5]	19	0.77	-	0.00	-	0.00	-	0.00	-	0.00	1	0.09	-	0.00
Pertussis	29	1.17	-	0.00	-	0.00	-	0.00	1	2.52	18	1.62	-	0.00
Rabies, Possible Exposure	264	10.66	5	6.41	19	25.94	57	28.93	1	2.52	98	8.81	32	11.68
Salmonellosis	496	20.02	17	21.79	39	53.25	114	57.86	12	30.18	338	30.38	92	33.59
Shigellosis	207	8.35	1	1.28	20	27.31	4	2.03	-	0.00	31	2.79	8	2.92
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	148	5.97	3	3.85	3	4.10	-	0.00	2	5.03	45	4.04	2	0.73
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	87	3.51	3	3.85	3	4.10	9	4.57	3	7.55	20	1.80	1	0.37
Streptococcal Disease, Invasive Group A	31	1.25	-	0.00	1	1.37	2	1.02	2	5.03	11	0.99	2	0.73
Syphilis	1,228	49.56	17	21.79	1	1.37	3	1.52	2	5.03	307	27.59	30	10.95
Toxoplasmosis	1	0.04	-	0.00	-	0.00	-	0.00	-	0.00	2	0.18	-	0.00
Tuberculosis	153	6.18	1	1.28	2	2.73	4	2.03	4	10.06	57	5.12	9	3.29
Varicella	83	3.35	4	5.13	33	45.06	15	7.61	-	0.00	29	2.61	15	5.48
Vibrio Infections[6]	14	0.57	1	1.28	2	2.73	2	1.02	-	0.00	1	0.09	-	0.00
West Nile Virus Disease	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	2	0.18	1	0.37

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non-O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus*, *V. cholerae* non-O1, *V. fluvialis*, *V. hollisae*, *V. mimicus*, *V. parahaemolyticus*, *V. vulnificus*, and *V.* other.

Table 1.3. (Continued) Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by County of Residence, Florida, 2010

Selected Notifiable Diseases	Palm Beach County		Pasco County		Pinellas County		Polk County		Putnam County		Santa Rosa County		Sarasota County	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	250	19.42	25	5.67	129	13.93	88	15.07	15	20.23	5	3.44	28	7.18
Campylobacteriosis	76	5.90	21	4.77	37	3.99	49	8.39	10	13.49	10	6.87	16	4.10
Chlamydia	3,484	270.66	944	214.25	3,844	415.02	2,447	418.97	335	451.89	356	244.59	870	223.21
Cryptosporidiosis	22	1.71	5	1.13	24	2.59	15	2.57	6	8.09	1	0.69	1	0.26
Cyclosporiasis	6	0.47	1	0.23	4	0.43	2	0.34	-	0.00	-	0.00	-	0.00
Escherichia coli, Shiga Toxin-Producing[1]	7	0.54	1	0.23	2	0.22	2	0.34	-	0.00	1	0.69	-	0.00
Giardiasis	101	7.85	40	9.08	44	4.75	49	8.39	5	6.74	12	8.24	16	4.10
Gonorrhea	916	71.16	186	42.21	1,329	143.49	499	85.44	119	160.52	35	24.05	205	52.60
Haemophilus influenzae, Invasive[2]	12	0.93	2	0.45	11	1.19	13	2.23	-	0.00	4	2.75	5	1.28
Hepatitis A	12	0.93	5	1.13	2	0.22	3	0.51	4	5.40	1	0.69	2	0.51
Hepatitis B (+HBsAg) in Pregnant Women[3]	25	11.38	7	10.04	26	16.84	20	19.32	1	8.22	3	10.99	5	10.10
Hepatitis B, Acute	26	2.02	9	2.04	8	0.86	13	2.23	4	5.40	2	1.37	16	4.10
Hepatitis C, Acute	3	0.23	8	1.82	11	1.19	4	0.68	2	2.70	3	2.06	6	1.54
Human Immunodeficiency Virus	314	24.39	36	8.17	217	23.43	104	17.81	11	14.84	10	6.87	36	9.24
Legionellosis	19	1.48	3	0.68	12	1.30	9	1.54	-	0.00	2	1.37	7	1.80
Listeriosis[4]	9	0.70	-	0.00	1	0.11	1	0.17	-	0.00	-	0.00	2	0.51
Lyme Disease	1	0.08	4	0.91	4	0.43	1	0.17	-	0.00	2	1.37	3	0.77
Malaria	16	1.24	1	0.23	2	0.22	2	0.34	-	0.00	-	0.00	1	0.26
Meningitis, Other (bacterial, cryptococcal, mycotic)	11	0.85	1	0.23	10	1.08	9	1.54	1	1.35	2	1.37	2	0.51
Meningococcal Disease[5]	1	0.08	-	0.00	4	0.43	2	0.34	-	0.00	-	0.00	2	0.51
Pertussis	9	0.70	25	5.67	10	1.08	16	2.74	3	4.05	31	21.30	11	2.82
Rabies, Possible Exposure	57	4.43	148	33.59	94	10.15	42	7.19	5	6.74	14	9.62	7	1.80
Salmonellosis	431	33.48	166	37.67	257	27.75	243	41.61	53	71.49	70	48.09	87	22.32
Shigellosis	49	3.81	12	2.72	47	5.07	11	1.88	9	12.14	1	0.69	7	1.80
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	47	3.65	10	2.27	16	1.73	21	3.60	2	2.70	9	6.18	21	5.39
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	35	2.72	9	2.04	15	1.62	32	5.48	1	1.35	8	5.50	16	4.10
Streptococcal Disease, Invasive Group A	20	1.55	3	0.68	6	0.65	8	1.37	5	6.74	1	0.69	10	2.57
Syphilis	242	18.80	18	4.09	121	13.06	101	17.29	5	6.74	6	4.12	27	6.93
Toxoplasmosis	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Tuberculosis	69	5.36	6	1.36	33	3.56	16	2.74	1	1.35	-	0.00	12	3.08
Varicella	63	4.89	8	1.82	22	2.38	25	4.28	3	4.05	29	19.92	38	9.75
Vibrio Infections[6]	7	0.54	-	0.00	12	1.30	9	1.54	-	0.00	5	3.44	6	1.54
West Nile Virus Disease	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non-O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus*, *V. cholerae* non-O1, *V. fluvialis*, *V. hollisae*, *V. mimicus*, *V. parahaemolyticus*, *V. vulnificus*, and *V.* other.

Table 1.3. (Continued) Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by County of Residence, Florida, 2010

Selected Notifiable Diseases	Seminole County		St. Johns County		St. Lucie County		Sumter County		Suwannee County		Taylor County		Union County	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	43	10.14	7	3.75	117	42.50	5	4.98	4	9.11	3	12.97	4	25.47
Campylobacteriosis	12	2.83	38	20.34	7	2.54	23	22.91	4	9.11	2	8.65	2	12.73
Chlamydia	1,406	331.64	408	218.37	1,035	375.96	169	168.34	134	305.18	65	281.00	61	388.41
Cryptosporidiosis	3	0.71	2	1.07	11	4.00	1	1.00	1	2.28	1	4.32	-	0.00
Cyclosporiasis	3	0.71	1	0.54	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Escherichia coli, Shiga Toxin-Producing[1]	2	0.47	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Giardiasis	33	7.78	15	8.03	14	5.09	2	1.99	3	6.83	8	34.58	2	12.73
Gonorrhea	370	87.27	71	38.00	233	84.64	64	63.75	30	68.32	7	30.26	6	38.20
Haemophilus influenzae, Invasive[2]	2	0.47	-	0.00	3	1.09	1	1.00	-	0.00	-	0.00	-	0.00
Hepatitis A	-	0.00	-	0.00	-	0.00	-	0.00	2	4.55	1	4.32	1	6.37
Hepatitis B (+HBsAg) in Pregnant Women[3]	9	10.21	2	5.98	10	22.44	1	8.61	-	0.00	-	0.00	-	0.00
Hepatitis B, Acute	3	0.71	-	0.00	4	1.45	1	1.00	-	0.00	-	0.00	-	0.00
Hepatitis C, Acute	-	0.00	2	1.07	6	2.18	-	0.00	-	0.00	-	0.00	-	0.00
Human Immunodeficiency Virus	59	13.92	14	7.49	84	30.51	10	9.96	8	18.22	1	4.32	1	6.37
Legionellosis	3	0.71	2	1.07	1	0.36	-	0.00	-	0.00	-	0.00	2	12.73
Listeriosis[4]	1	0.24	2	1.07	-	0.00	1	1.00	-	0.00	-	0.00	-	0.00
Lyme Disease	1	0.24	1	0.54	2	0.73	1	1.00	-	0.00	-	0.00	-	0.00
Malaria	2	0.47	-	0.00	1	0.36	-	0.00	-	0.00	-	0.00	-	0.00
Meningitis, Other (bacterial, cryptococcal, mycotic)	3	0.71	2	1.07	2	0.73	-	0.00	-	0.00	-	0.00	-	0.00
Meningococcal Disease[5]	1	0.24	-	0.00	1	0.36	-	0.00	-	0.00	-	0.00	-	0.00
Pertussis	1	0.24	2	1.07	3	1.09	-	0.00	-	0.00	5	21.62	-	0.00
Rabies, Possible Exposure	19	4.48	18	9.63	45	16.35	12	11.95	15	34.16	-	0.00	2	12.73
Salmonellosis	121	28.54	92	49.24	80	29.06	53	52.79	22	50.10	11	47.55	9	57.31
Shigellosis	11	2.59	10	5.35	2	0.73	3	2.99	-	0.00	-	0.00	1	6.37
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	17	4.01	1	0.54	14	5.09	3	2.99	-	0.00	-	0.00	-	0.00
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	16	3.77	2	1.07	6	2.18	1	1.00	3	6.83	-	0.00	1	6.37
Streptococcal Disease, Invasive Group A	6	1.42	-	0.00	1	0.36	-	0.00	-	0.00	-	0.00	-	0.00
Syphilis	41	9.67	7	3.75	30	10.90	3	2.99	3	6.83	3	12.97	2	12.73
Toxoplasmosis	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Tuberculosis	10	2.36	2	1.07	12	4.36	2	1.99	2	4.55	1	4.32	-	0.00
Varicella	23	5.43	13	6.96	6	2.18	1	1.00	4	9.11	1	4.32	8	50.94
Vibrio Infections[6]	-	0.00	3	1.61	1	0.36	-	0.00	-	0.00	-	0.00	-	0.00
West Nile Virus Disease	-	0.00	-	0.00	-	0.00	-	0.00	1	2.28	-	0.00	-	0.00

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non-O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus*, *V. cholerae* non-O1, *V. fluvialis*, *V. hollisae*, *V. mimicus*, *V. parahaemolyticus*, *V. vulnificus*, and *V.* other.

Table 1.3. (Continued) Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by County of Residence, Florida, 2010

Selected Notifiable Diseases	Volusia County		Wakulla County		Walton County		Washington County	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	64	12.63	2	6.30	5	8.62	-	0.00
Campylobacteriosis	18	3.55	2	6.30	4	6.90	4	15.93
Chlamydia	1,832	361.54	124	390.65	146	251.80	70	278.78
Cryptosporidiosis	5	0.99	-	0.00	1	1.72	1	3.98
Cyclosporiasis	-	0.00	-	0.00	-	0.00	-	0.00
Escherichia coli, Shiga Toxin-Producing[1]	2	0.39	-	0.00	-	0.00	-	0.00
Giardiasis	45	8.88	4	12.60	1	1.72	2	7.97
Gonorrhea	582	114.86	12	37.80	10	17.25	13	51.77
Haemophilus influenzae, Invasive[2]	7	1.38	-	0.00	1	1.72	-	0.00
Hepatitis A	-	0.00	-	0.00	-	0.00	-	0.00
Hepatitis B (+HBsAg) in Pregnant Women[3]	12	14.16	2	37.81	1	10.56	-	0.00
Hepatitis B, Acute	5	0.99	-	0.00	3	5.17	-	0.00
Hepatitis C, Acute	2	0.39	-	0.00	-	0.00	-	0.00
Human Immunodeficiency Virus	77	15.20	2	6.30	4	6.90	2	7.97
Legionellosis	1	0.20	-	0.00	1	1.72	-	0.00
Listeriosis[4]	-	0.00	-	0.00	-	0.00	-	0.00
Lyme Disease	2	0.39	-	0.00	1	1.72	1	3.98
Malaria	2	0.39	1	3.15	-	0.00	-	0.00
Meningitis, Other (bacterial, cryptococcal, mycotic)	8	1.58	1	3.15	-	0.00	-	0.00
Meningococcal Disease[5]	-	0.00	-	0.00	-	0.00	-	0.00
Pertussis	3	0.59	1	3.15	-	0.00	-	0.00
Rabies, Possible Exposure	125	24.67	10	31.50	9	15.52	1	3.98
Salmonellosis	206	40.65	8	25.20	30	51.74	9	35.84
Shigellosis	9	1.78	1	3.15	-	0.00	-	0.00
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	31	6.12	-	0.00	2	3.45	-	0.00
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	24	4.74	2	6.30	-	0.00	2	7.97
Streptococcal Disease, Invasive Group A	10	1.97	-	0.00	1	1.72	-	0.00
Syphilis	45	8.88	2	6.30	7	12.07	1	3.98
Toxoplasmosis	-	0.00	-	0.00	-	0.00	-	0.00
Tuberculosis	10	1.97	-	0.00	2	3.45	-	0.00
Varicella	28	5.53	1	3.15	6	10.35	10	39.83
Vibrio Infections[6]	4	0.79	1	3.15	-	0.00	-	0.00
West Nile Virus Disease	-	0.00	-	0.00	-	0.00	-	0.00

1 Includes reported cases of *E. coli,* O157:H7, *E. coli,* serogrpouped non-O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus, V. cholerae* non-O1, *V. fluvialis, V. hollisae, V. mimicus, V. parahaemolyticus, V. vulnificus*, and *V. other.*

Table 1.4. Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by Age Group, Florida, 2010

	Age Group											
Selected Notifiable Diseases	<1		1-4		5-9		10-14		15-19		20-24	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	1	0.44	-	0.00	1	0.09	6	0.53	45	3.77	157	12.98
Campylobacteriosis	63	27.72	181	19.91	93	8.21	42	3.71	67	5.61	64	5.29
Chlamydia	32	14.08	-	0.00	2	0.18	709	62.57	24,424	2046.78	28,588	2362.88
Cryptosporidiosis	6	2.64	29	3.19	18	1.59	10	0.88	17	1.42	23	1.90
Cyclosporiasis	-	0.00	2	0.22	-	0.00	-	0.00	1	0.08	2	0.17
Escherichia coli, Shiga Toxin-Producing[1]	4	1.76	23	2.53	7	0.62	8	0.71	11	0.92	-	0.00
Giardiasis	20	8.80	400	44.00	351	30.99	223	19.68	122	10.22	119	9.84
Gonorrhea	2	0.88	7	0.77	2	0.18	185	16.33	5,739	480.94	6,994	578.07
Haemophilus influenzae, Invasive Disease[2]	18	7.92	14	1.54	4	0.35	2	0.18	-	0.00	3	0.25
Hepatitis A	-	0.00	2	0.22	9	0.79	8	0.71	17	1.42	18	1.49
Hepatitis B (+HBsAg) in Pregnant Women[3]	-	0.00	-	0.00	-	0.00	1	0.18	21	3.60	70	11.83
Hepatitis B, Acute	-	0.00	-	0.00	-	0.00	-	0.00	2	0.17	8	0.66
Hepatitis C, Acute	-	0.00	-	0.00	-	0.00	1	0.09	1	0.08	13	1.07
Human Immunodeficiency Virus	8	3.52	7	0.77	5	0.44	12	1.06	225	18.86	707	58.44
Legionellosis	-	0.00	-	0.00	-	0.00	1	0.09	-	0.00	2	0.17
Listeriosis[4]	6	2.64	1	0.11	-	0.00	-	0.00	2	0.17	-	0.00
Lyme Disease	-	0.00	1	0.11	5	0.44	5	0.44	2	0.17	3	0.25
Malaria	-	0.00	-	0.00	1	0.09	6	0.53	9	0.75	10	0.83
Meningitis, Other	40	17.60	6	0.66	4	0.35	4	0.35	2	0.17	1	0.08
Meningococcal Disease[5]	7	3.08	3	0.33	2	0.18	3	0.26	3	0.25	9	0.74
Pertussis	100	44.00	40	4.40	25	2.21	38	3.35	14	1.17	9	0.74
Rabies, Possible Exposure	27	11.88	102	11.22	126	11.12	123	10.86	160	13.41	178	14.71
Salmonellosis	1,291	568.04	1,489	163.79	543	47.94	248	21.89	163	13.66	165	13.64
Shigellosis	36	15.84	432	47.52	304	26.84	61	5.38	30	2.51	53	4.38
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	28	12.32	117	12.87	25	2.21	3	0.26	8	0.67	14	1.16
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	22	9.68	39	4.29	11	0.97	5	0.44	3	0.25	11	0.91
Streptococcal Disease, Invasive Group A	7	3.08	14	1.54	10	0.88	9	0.79	3	0.25	7	0.58
Syphilis	15	6.60	-	0.00	-	0.00	4	0.35	247	20.70	606	50.09
Toxoplasmosis	-	0.00	-	0.00	1	0.09	-	0.00	-	0.00	-	0.00
Tuberculosis	3	1.32	28	3.08	10	0.88	13	1.15	24	2.01	47	3.88
Varicella	63	27.72	140	15.40	318	28.07	193	17.03	69	5.78	19	1.57
Vibrio Infections[6]	-	0.00	4	0.44	11	0.97	9	0.79	9	0.75	2	0.17
West Nile Virus	-	0.00	-	0.00	1	0.09	-	0.00	2	0.17	-	0.00

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non O157, and *E. coli*, Shiga toxin-producing
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus, V. cholerae* non-O1, *V. fluvialis, V. hollisae, V. mimicus, V. parahaemolyticus, V. vulnificus*, and *V. other.*

Table 1.4. (Continued) Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by Age Group, Florida, 2010

	Age Group													
Selected Notifiable Diseases	25-34		35-44		45-54		55-64		65-74		75-84		85+	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	682	29.88	1,011	42.40	1,036	38.81	397	17.08	105	6.44	20	1.74	-	0.00
Campylobacteriosis	99	4.34	101	4.24	144	5.39	128	5.51	111	6.81	88	7.64	30	5.54
Chlamydia	16,396	718.40	3,306	138.65	909	34.05	193	8.31	35	2.15	6	0.52	1	0.18
Cryptosporidiosis	42	1.84	38	1.59	56	2.10	46	1.98	61	3.74	42	3.65	20	3.70
Cyclosporiasis	5	0.22	14	0.59	17	0.64	10	0.43	9	0.55	2	0.17	1	0.18
Escherichia coli, Shiga Toxin-Producing[1]	6	0.26	11	0.46	3	0.11	4	0.17	2	0.12	5	0.43	1	0.18
Giardiasis	203	8.89	234	9.81	197	7.38	126	5.42	82	5.03	38	3.30	24	4.43
Gonorrhea	4,869	213.34	1,475	61.86	667	24.99	153	6.58	33	2.02	2	0.17	-	0.00
Haemophilus influenzae, Invasive Disease[2]	11	0.48	9	0.38	11	0.41	25	1.08	26	1.59	31	2.69	37	6.84
Hepatitis A	19	0.83	19	0.80	31	1.16	16	0.69	13	0.80	20	1.74	6	1.11
Hepatitis B (+HBsAg) in Pregnant Women[3]	259	23.24	87	7.36	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00
Hepatitis B, Acute	71	3.11	90	3.77	75	2.81	36	1.55	24	1.47	8	0.69	1	0.18
Hepatitis C, Acute	32	1.40	33	1.38	16	0.60	5	0.22	1	0.06	2	0.17	1	0.18
Human Immunodeficiency Virus	1,214	53.19	1,289	54.06	1,170	43.83	437	18.81	116	7.11	21	1.82	-	0.00
Legionellosis	5	0.22	12	0.50	26	0.97	47	2.02	46	2.82	24	2.08	9	1.66
Listeriosis[4]	3	0.13	1	0.04	4	0.15	7	0.30	12	0.74	11	0.95	7	1.29
Lyme Disease	8	0.35	8	0.34	13	0.49	9	0.39	15	0.92	11	0.95	4	0.74
Malaria	20	0.88	25	1.05	36	1.35	19	0.82	9	0.55	4	0.35	-	0.00
Meningitis, Other	14	0.61	21	0.88	35	1.31	32	1.38	14	0.86	7	0.61	3	0.55
Meningococcal Disease[5]	6	0.26	2	0.08	3	0.11	10	0.43	5	0.31	5	0.43	2	0.37
Pertussis	23	1.01	25	1.05	25	0.94	17	0.73	8	0.49	3	0.26	1	0.18
Rabies, Possible Exposure	282	12.36	289	12.12	348	13.04	247	10.63	136	8.34	71	6.16	25	4.62
Salmonellosis	370	16.21	390	16.36	445	16.67	435	18.72	381	23.37	268	23.27	93	17.18
Shigellosis	105	4.60	65	2.73	51	1.91	36	1.55	17	1.04	16	1.39	6	1.11
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	43	1.88	75	3.15	116	4.35	127	5.47	99	6.07	100	8.68	61	11.27
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	45	1.97	61	2.56	120	4.50	123	5.29	97	5.95	92	7.99	64	11.82
Streptococcal Disease, Invasive Group A	15	0.66	27	1.13	33	1.24	35	1.51	44	2.70	40	3.47	24	4.43
Syphilis	1,015	44.47	962	40.34	841	31.51	253	10.89	82	5.03	33	2.86	6	1.11
Toxoplasmosis	2	0.09	5	0.21	-	0.00	2	0.09	-	0.00	-	0.00	-	0.00
Tuberculosis	127	5.56	145	6.08	165	6.18	127	5.47	70	4.29	56	4.86	20	3.70
Varicella	76	3.33	61	2.56	24	0.90	6	0.26	2	0.12	5	0.43	1	0.18
Vibrio Infections[6]	9	0.39	18	0.75	19	0.71	20	0.86	13	0.80	9	0.78	7	1.29
West Nile Virus Disease	-	0.00	1	0.04	5	0.19	-	0.00	-	0.00	3	0.26	-	0.00

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non O157, and *E. coli*, Shiga toxin-producing
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus*, *V. cholerae* non-O1, *V. fluvialis*, *V. hollisae*, *V. mimicus*, *V. parahaemolyticus*, *V. vulnificus*, and *V. other.*

Table 1.5 (below) includes the top ten diseases based on frequency of report by age group. These diseases are grouped by color into a few general disease families: the sexually transmitted diseases are colored in the blue spectrum, vaccine preventable diseases in the orange spectrum, and enteric diseases in the green spectrum. One striking observation is the large burden of sexually transmitted diseases seen in the 15-54 year-old age groups.

Table 1.5. Top 10 Reported Confirmed and Probable Cases of Disease by Age Group, Florida, 2010

	Age Group												
Rank	<1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
1	Salmonellosis (1,291)	Salmonellosis (1,489)	Salmonellosis (543)	Chlamydia (709)	Chlamydia (24,424)	Chlamydia (28,588)	Chlamydia (16,396)	Chlamydia (3,306)	HIV (1,170)	HIV (437)	Salmonellosis (381)	Salmonellosis (268)	Salmonellosis (93)
2	Pertussis (100)	Shigellosis (432)	Giardiasis (351)	Salmonellosis (248)	Gonorrhea (5,739)	Gonorrhea (6,994)	Gonorrhea (4,869)	Gonorrhea (1,475)	AIDS (1,036)	Salmonellosis (435)	Rabies, Possible Exposure (136)	*Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant (100)	*Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible (64)
3	Campylobacteriosis (63)	Giardiasis (400)	Varicella (318)	Giardiasis (223)	Syphilis (247)	HIV (707)	HIV (1214)	HIV (1,289)	Chlamydia (909)	AIDS (397)	HIV (116)	*Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible (92)	*Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant (61)
4	Varicella (63)	Campylobacteriosis (181)	Shigellosis (304)	Varicella (193)	HIV (225)	Syphilis (606)	Syphilis (1,015)	AIDS (1,011)	Syphilis (841)	Syphilis (253)	Campylobacteriosis (111)	Campylobacteriosis (88)	*Haemophilus influenzae*, Invasive Disease (37)
5	Meningitis, Other (40)	Varicella (140)	Rabies, Possible Exposure (126)	Gonorrhea (185)	Salmonellosis (163)	Rabies, Possible Exposure (178)	AIDS (682)	Syphilis (962)	Gonorrhea (667)	Rabies, Possible Exposure (247)	AIDS (105)	Rabies, Possible Exposure (71)	Campylobacteriosis (30)
6	Shigellosis (36)	*Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant (117)	Campylobacteriosis (93)	Rabies, Possible Exposure (123)	Rabies, Possible Exposure (160)	Salmonellosis (165)	Salmonellosis (370)	Salmonellosis (390)	Salmonellosis (445)	Chlamydia (193)	*Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant (99)	Tuberculosis (56)	Rabies, Possible Exposure (25)
7	Chlamydia (32)	Rabies, Possible Exposure (102)	Pertussis (25)	Shigellosis (61)	Giardiasis (122)	AIDS (157)	Rabies, Possible Exposure (282)	Rabies, Possible Exposure (289)	Rabies, Possible Exposure (348)	Gonorrhea (153)	*Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible (97)	Cryptosporidiosis (42)	Giardiasis (20)
8	*Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant (38)	Pertussis (40)	*Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant (25)	Campylobacteriosis (42)	Varicella (69)	Giardiasis (119)	Hepatitis B (+HBsAg in Pregnant Woman) (259)	Giardiasis (234)	Giardiasis (197)	Campylobacteriosis (128)	Giardiasis (82)	Streptococcal Disease, Invasive Group A (40)	Streptococcal Disease, Invasive Group A (24)
9	Rabies, Possible Exposure (27)	*Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible (39)	Cryptosporidiosis (18)	Pertussis (38)	Campylobacteriosis (67)	Hepatitis B (+HBsAg) in Pregnant Woman (70)	Giardiasis (203)	Tuberculosis (145)	Tuberculosis (165)	*Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant (127)	Syphilis (82)	Giardiasis (38)	Cryptosporidiosis (24)
10	*Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible (22)	Cryptosporidiosis (29)	*Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible (11)	Tuberculosis (13)	AIDS (45)	Campylobacteriosis (64)	Tuberculosis (127)	Campylobacteriosis (101)	Campylobacteriosis (144)	Tuberculosis (127)	Tuberculosis (70)	Syphilis (33)	Tuberculosis (20)

Table 1.6. Reported Confirmed and Probable Cases and Incidence Rate per 100,000 Population for Selected Notifiable Diseases by Gender, Florida, 2010

Selected Notifiable Diseases	Male		Female	
	Number	Rate	Number	Rate
Acquired Immune Deficiency Syndrome	2,362	25.64	1,099	11.48
Campylobacteriosis	676	7.34	535	5.59
Chlamydia	21,361	231.84	53,320	556.86
Cryptosporidiosis	221	2.40	187	1.95
Cyclosporiasis	35	0.38	28	0.29
Escherichia coli, Shiga Toxin-Producing[1]	43	0.47	42	0.44
Giardiasis	1,204	13.07	921	9.62
Gonorrhea	9,907	107.53	10,242	106.96
Haemophilus influenzae, Invasive Disease[2]	80	0.87	110	1.15
Hepatitis A	110	1.19	68	0.71
Hepatitis B (+HBsAg) in Pregnant Women[3]	-	-	438	12.62
Hepatitis B, Acute	195	2.12	119	1.24
Hepatitis C, Acute	57	0.62	48	0.50
Human Immunodeficiency Virus	3,880	42.11	1,331	13.90
Legionellosis	117	1.27	55	0.57
Listeriosis[4]	25	0.27	29	0.30
Lyme Disease	34	0.37	50	0.52
Malaria	87	0.94	52	0.54
Meningitis, Other (bacterial, cryptococcal, mycotic)	106	1.15	77	0.80
Meningococcal Disease[5]	26	0.28	34	0.36
Pertussis	160	1.74	167	1.74
Rabies, Possible Exposure	1,039	11.28	1,075	11.23
Salmonellosis	3,083	33.46	3,197	33.39
Shigellosis	598	6.49	614	6.41
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	420	4.56	396	4.14
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	361	3.92	332	3.47
Streptococcal disease, Invasive Group A	159	1.73	109	1.14
Syphilis	3,155	34.24	916	9.57
Toxoplasmosis	6	0.07	3	0.03
Tuberculosis	531	5.76	304	3.17
Varicella	506	5.49	471	4.92
Vibrio Infections[6]	85	0.92	41	0.43
West Nile Virus Disease	9	0.10	3	0.03

1 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non O157, and *E. coli*, Shiga toxin-producing.
2 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
3 Rate is per 100,000 women aged 15-44 years.
4 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes*.
5 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
6 Includes reported cases of *V. alginolyticus, V. cholerae* non-O1, *V. fluvialis, V. hollisae, V. mimicus, V. parahaemolyticus, V. vulnificus*, and *V.* other.
NA - Not Applicable

Table 1.7. Reported Confirmed and Probable Cases of Selected Notifiable Diseases by Month of Onset[1], Florida, 2010

Disease	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Campylobacteriosis	85	62	79	101	85	111	124	146	76	84	85	66
Cryptosporidiosis	26	22	34	28	32	30	26	52	34	25	33	23
Cyclosporiasis	3	4	2	1	10	30	2	1	2	3	1	1
Escherichia coli, Shiga Toxin-Producing[2]	2	3	6	4	7	12	10	8	5	3	6	8
Giardiasis	64	82	95	70	113	103	125	148	96	77	77	73
Haemophilus influenzae, Invasive Disease[3]	10	12	15	16	5	8	9	8	13	10	13	12
Hepatitis A	17	10	8	12	14	20	19	18	15	18	17	7
Hepatitis B (+HBsAg) in a Pregnant Woman[4]	0	0	1	4	4	2	3	2	6	2	2	3
Hepatitis B, Acute	29	22	25	27	27	26	27	29	25	19	30	12
Hepatitis C, Acute	11	10	11	9	8	9	8	12	5	7	8	5
Legionellosis	12	6	13	14	11	18	16	17	16	13	19	14
Listeriosis[5]	8	1	1	2	9	6	6	2	7	2	4	1
Lyme Disease	7	3	3	3	4	11	16	13	4	4	4	2
Malaria	13	11	8	6	6	12	14	20	15	8	15	11
Meningitis, Other (bacterial, cryptococcal, mycotic)	14	14	19	16	15	18	8	10	20	10	13	13
Meningococcal Disease[6]	8	5	12	5	5	2	4	2	3	4	4	6
Pertussis	16	16	23	28	35	27	39	36	22	23	33	27
Rabies, Possible Exposure	149	148	164	174	191	186	223	170	128	180	149	134
Salmonellosis	274	188	215	257	310	487	706	826	778	670	456	318
Shigellosis	41	47	49	58	78	109	114	160	127	121	130	111
Streptococcus pneumoniae, Invasive Disease, Drug-Resistant	62	82	82	55	46	23	13	13	23	25	32	75
Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible	44	49	68	40	37	22	19	15	26	35	49	63
Streptococcal Disease, Invasive Group A	10	16	16	18	12	25	19	17	11	16	14	27
Toxoplasmosis	0	1	1	1	0	0	1	1	1	1	1	0
Varicella	71	93	94	154	150	55	38	39	83	52	64	51
Vibrio Infections[7]	4	1	1	11	15	16	22	16	4	9	3	3
West Nile Virus	0	0	0	0	0	0	2	4	3	3	0	0

1 Only cases of disease with known dates of onset are included in this table.
2 Includes reported cases of *E. coli*, O157:H7, *E. coli*, serogrouped non O157, and *E. coli*, Shiga toxin-producing.
3 Includes reported cases of *Haemophilus influenzae* presenting as cellulitis, epiglottitis, meningitis, bacterimia, and septic arthritis.
4 Rate is per 100,000 women aged 15-44 years.
5 Includes reported cases of listeriosis and cases of meningitis caused by *Listeria monocytogenes.*
6 Includes reported cases of meningococcal meningitis, pneumonia caused by *Neisseria meningitidis*, meningococcal disease, and meningococcemia disseminated.
7 Includes reported cases of *V. alginolyticus, V. cholerae* non-O1, *V. fluvialis, V. hollisae, V. mimicus, V. parahaemolyticus, V. vulnificus*, and *V.* other.

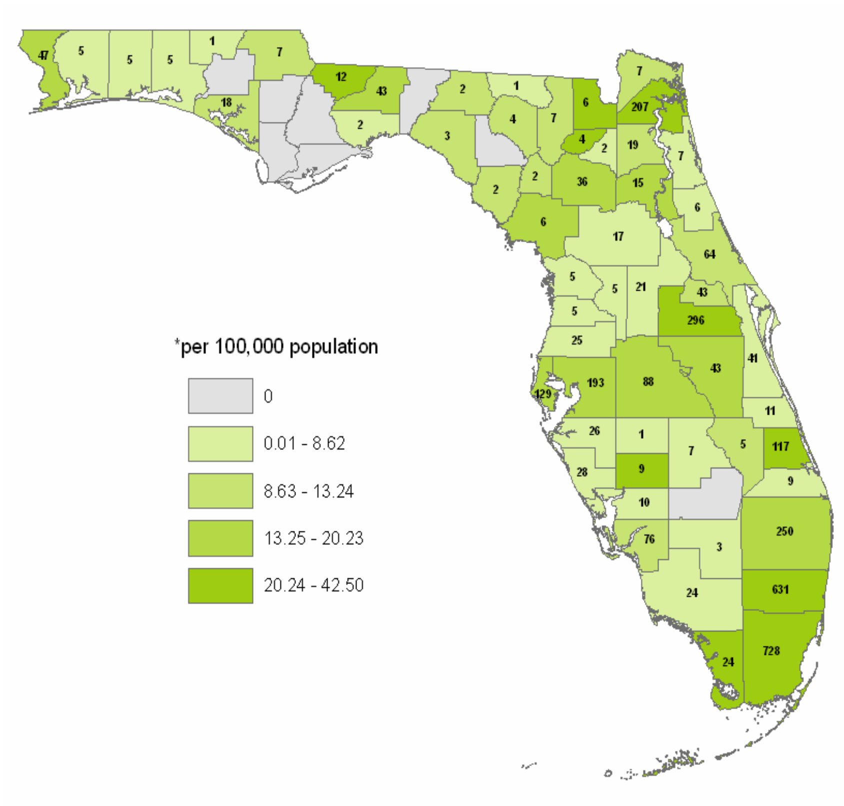
Section 2

Selected Notifiable Diseases and Conditions

Acquired Immune Deficiency Syndrome and Human Immunodeficiency Virus

Florida ranked second among states in the estimated number of acquired immune deficiency syndrome (AIDS) cases diagnosed in 2009, the most recent year for which data is available nationally. That year, a total of 4,799 (14% of the U.S. total) AIDS cases were diagnosed in New York, followed by 4,392 (13%) in Florida and 3,760 (11%) in California. Cumulatively, however, Florida ranks third behind New York and California. In 2010, at least one AIDS case was reported in all but eight counties (Figure 1). Although the AIDS epidemic is widespread throughout Florida, the majority of cases were reported from eight counties: Broward, Duval, Hillsborough, Miami-Dade, Orange, Palm Beach, Pinellas and St. Lucie, all reporting over 100 cases in 2010. These eight counties reported a combined total of 2,551 cases, or 74% of Florida's total reported cases in 2010 (N=3,461). The greatest numbers of AIDS cases were reported from two counties located in the southeastern part of the state, Broward (N=631) and Miami-Dade (N=728). These two counties reported a combined total of 1,359 cases in 2010, 39% of the statewide total.

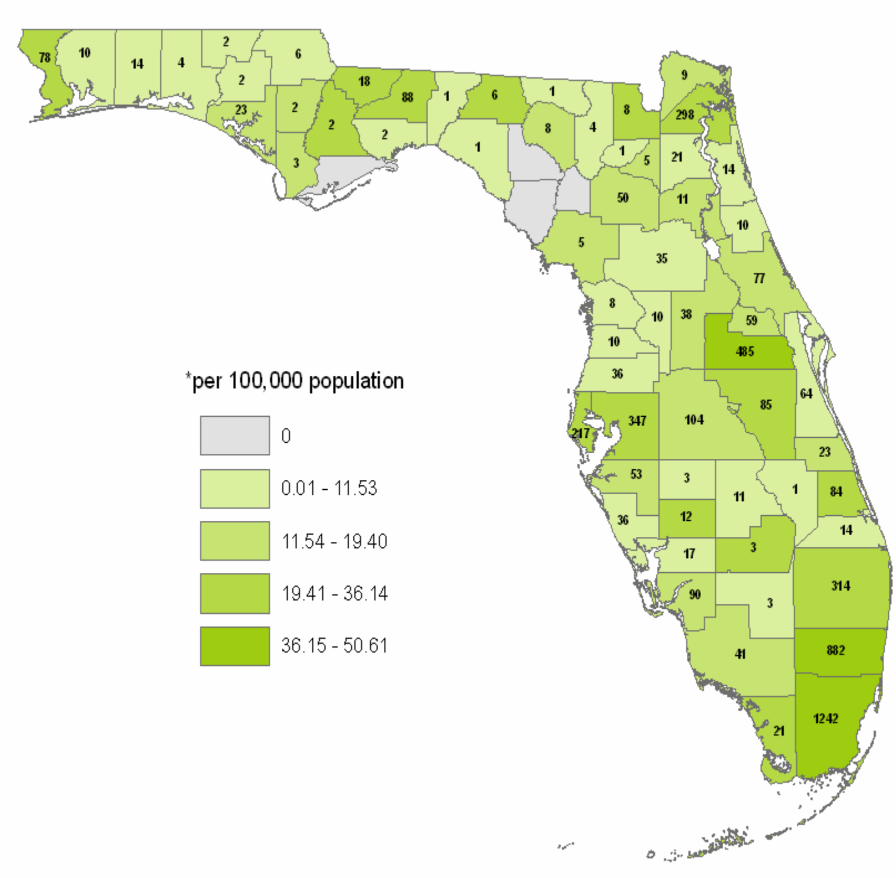
Figure 1. AIDS Cases and Rate* by County of Residence†, Florida, 2010



†County totals exclude Department of Corrections cases (N=46)

Florida ranked first among states in the number of Human Immunodeficiency Virus (HIV) cases reported in 2009, which is the most recent year data is available nationally. That year, a total of 5,755 (13% of the U.S. total) HIV cases were reported in Florida, followed by 4,886 (11%) in California and 4,291 (10%) in New York. In 2010, at least one HIV case was reported in all but four counties and eight counties reported 100 or more cases (Figure 2). These eight counties were Broward, Duval, Hillsborough, Miami-Dade, Orange, Palm Beach, Pinellas and Polk. They reported a combined total of 3,889 cases, or 75% of Florida's total reported cases in 2010 (N=5,211). The greatest numbers of HIV cases were reported from Miami-Dade (N=1,242), Broward (N=882), and Orange (N=485). These three counties reported a combined total of 2,609 cases in 2010, or 50% of the statewide total.

Figure 2. HIV Cases and Rate* by County of Residence†, Florida, 2010



†County totals exclude Department of Corrections cases (N=79)

Reported HIV cases increased in 2002 due to increased HIV testing statewide as part of the “Get to Know Your Status” campaign. Since that time, newly reported HIV cases have decreased each year until 2007. Enhanced reporting laws were implemented in November 2006, leading to an artificial peak in HIV cases in 2007 and 2008, followed by an artificial decrease in 2009 with an expected leveling in 2010 (Figure 3).

Figure 3. HIV Cases, by Year of Report, Florida, 2001-2010

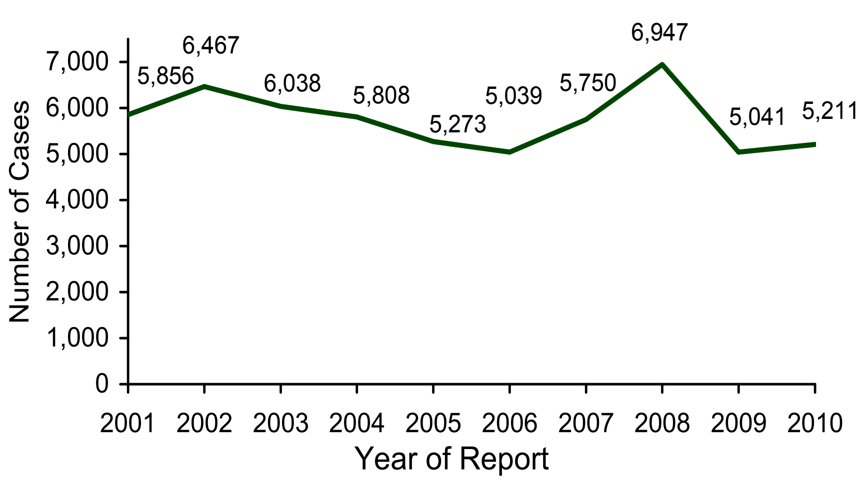
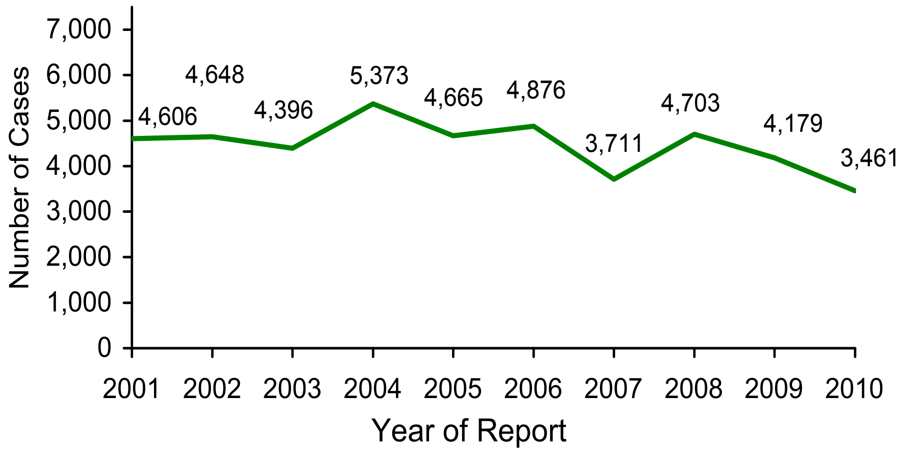


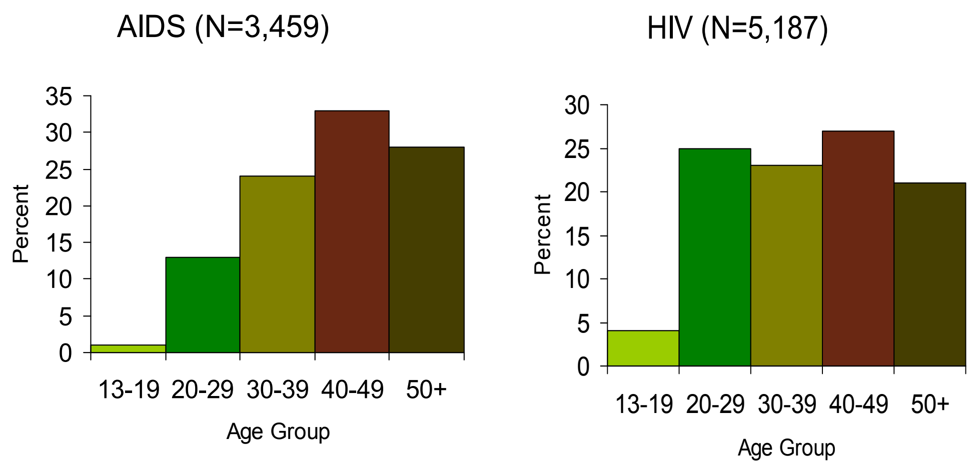
Figure 4. AIDS Cases, by Year of Report, Florida, 2001-2010



Adult AIDS and HIV Cases by Selected Demographics

As in previous years, the greatest proportion of AIDS cases reported in 2010 was among persons aged 40-49 years old (33%) (Figure 5). This year, the 50+ age group was second, with 28% of the reported AIDS cases, followed by the 30-39 age group with 24%. As with AIDS cases, a greater proportion of HIV cases in 2010 were also reported among those aged 40-49 (27%) followed by those aged 20-29 (25%) and aged 30-39 (23%). Adult cases for both AIDS and HIV are defined as those occurring in people 13 years of age and older. The analysis shown below includes only adult cases.

Figure 5. Age Distribution of Florida's Adult* AIDS and HIV Cases, 2010

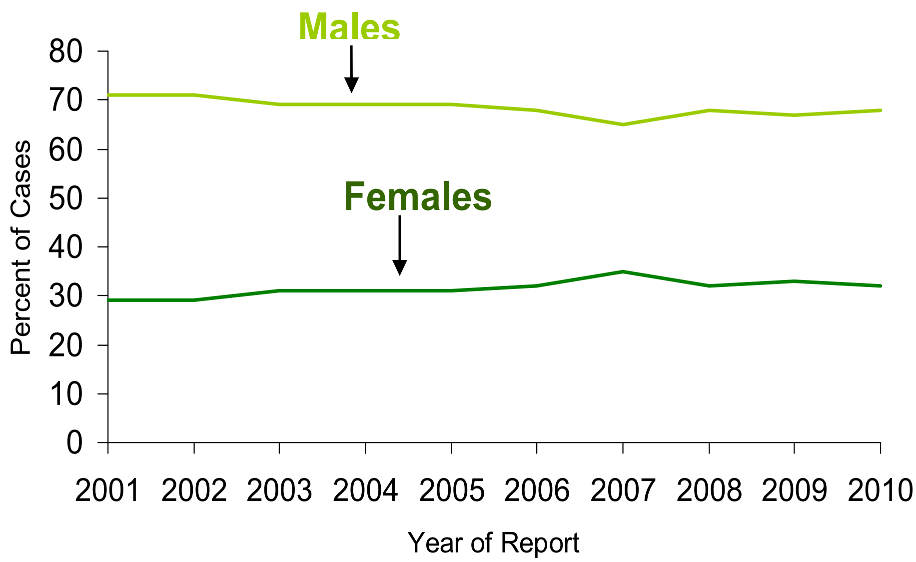


*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

AIDS cases tend to represent HIV transmission that occurred many years ago. The relative increase in female cases reflects the changing face of the AIDS epidemic over time. In 2001, 29% of the AIDS cases reported in Florida were female (Figure 6). Over the past ten years, the proportion of AIDS cases among men and women has remained fairly level. The male-to-female ratio declined slightly from 2.4 to 1 in 2001 to 2.1 to 1 in 2010.

In 2010, the AIDS case rate per 100,000 population was 30.6 among adult males and 13.5 among adult females, indicating that AIDS cases in this period were still more likely to be reported among males than females in Florida.

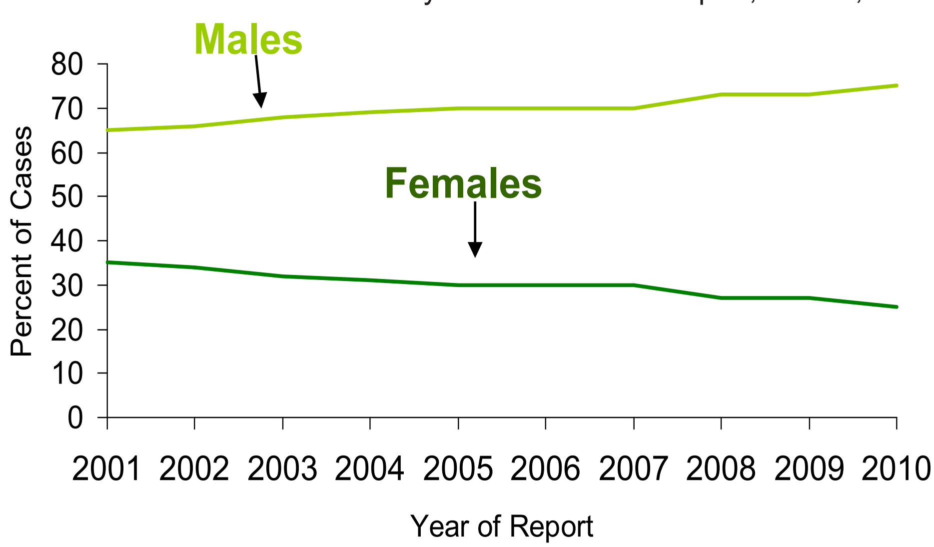
Figure 6. Percent of Adult* AIDS Cases by Sex and Year of Report, Florida, 2001-2010



*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

The trend for HIV cases by sex is the opposite of that for AIDS cases. The relative increase in male HIV cases might be attributed to proportional increases in HIV transmission among men who have sex with men (MSM), which may influence future AIDS trends. In 2001, 35% of the HIV cases reported in Florida were female (Figure 7). Over the past ten years, the proportion of HIV cases among men has increased while the proportion among women has decreased. The result is an increase in the male-to-female ratio, from 1.9 to 1 in 2001 to 3.0 to 1 in 2010. This pattern differs from that seen for AIDS cases during the same time period. In 2010, the HIV case rate per 100,000 population was 50.2 among adult males and 16.2 among adult females, higher than the rates seen in AIDS cases.

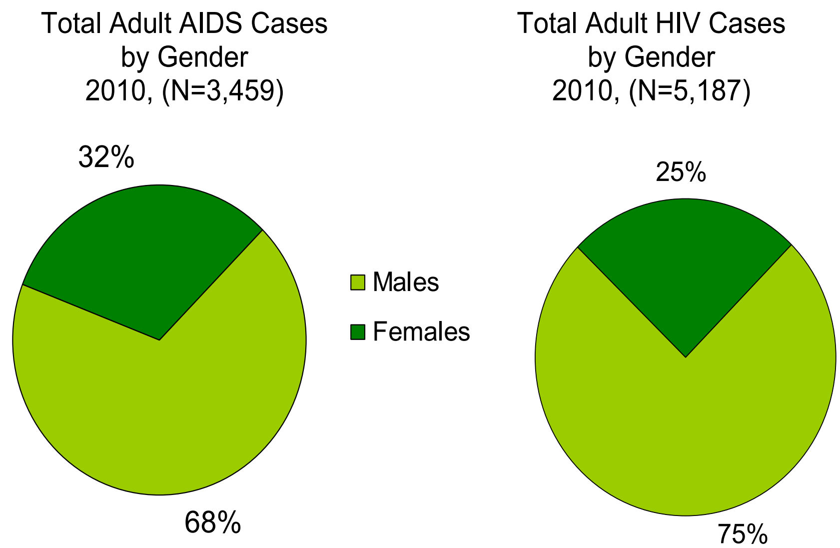
Figure 7. Percent of Adult* HIV Cases by Sex and Year of Report, Florida, 2001-2010



*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

In 2010 a total of 2,362 adult men and 1,097 adult women were reported with AIDS, representing 68% and 32% of cases, respectively (Figure 8). Also in 2010, a total of 3,873 adult males and 1,314 adult females were reported with HIV infection, representing 75% and 25% of cases, respectively. Florida's adult population is 49% male and 51% female; therefore, men are disproportionately impacted.

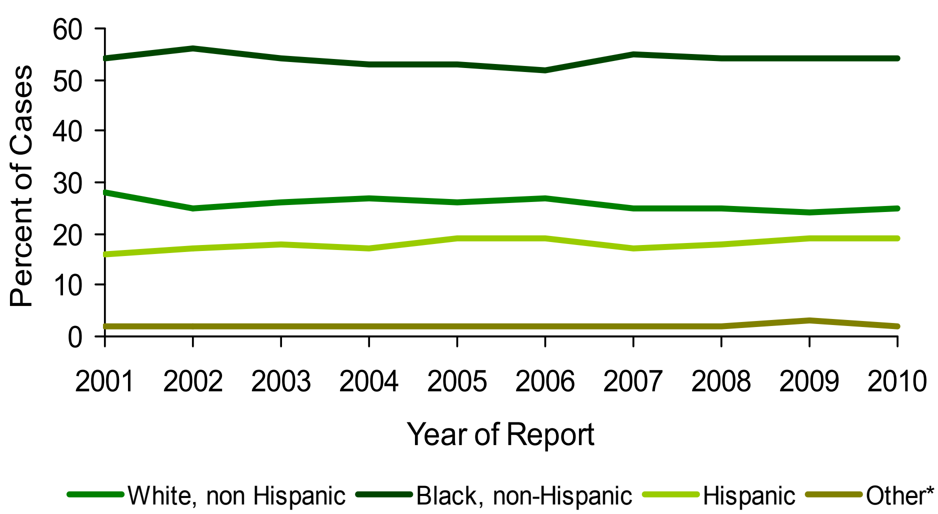
Figure 8. Proportion of Adult* AIDS and HIV Cases by Sex, Florida, 2010



*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

Over the past 10 years, the proportion of AIDS cases has decreased among whites by 11% while increasing by 19% among Hispanics (Figure 9). The proportion of AIDS cases among blacks has remained fairly constant.

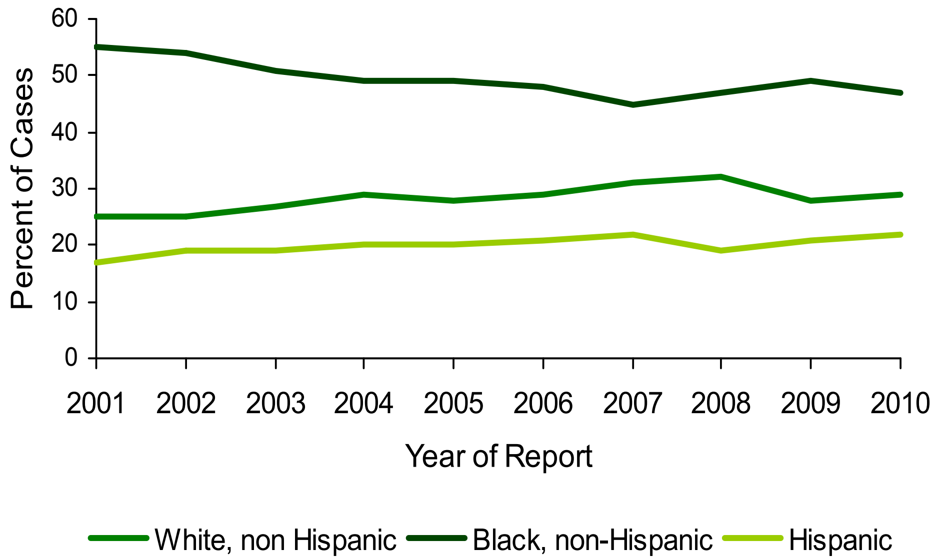
Figure 9. Percent of Adult* AIDS Cases by Race and Ethnicity, by Year of Report, Florida, 2001-2010



*Other includes American Indian/Alaska Native, Asian/Pacific Islander, and multi-racial.

HIV case reporting, which was implemented in mid-1997, reflects more recent trends in the epidemic with respect to the distribution of cases by race/ethnicity. The proportion of black HIV cases has decreased by 15% from 2001 to 2010. In contrast, increases were observed among both white (16%) and Hispanic (29%) HIV cases over this same time period (Figure 10).

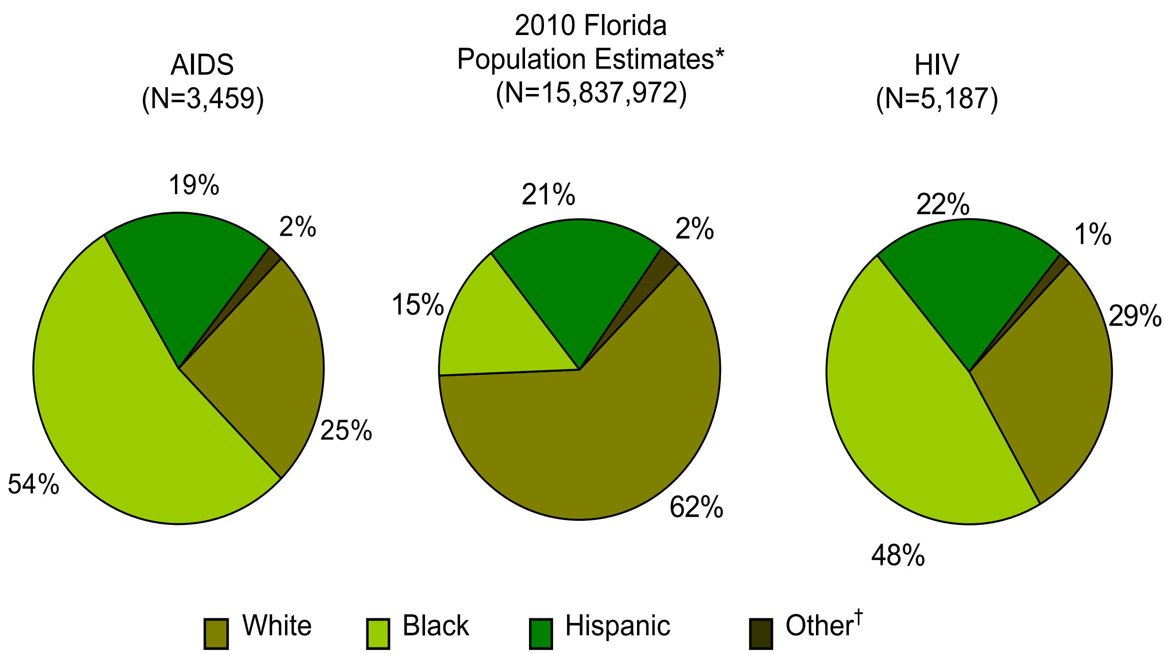
Figure 10. Percent of Adult* HIV Cases by Race and Ethnicity, by Year of Report, Florida, 2001-2010



*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

In 2010, blacks were over-represented among AIDS and HIV cases, accounting for 54% of adult AIDS cases and 48% of adult HIV cases, but only 15% of the Florida adult population (Figure 11). Hispanics represent 21% of the adult population and account for 19% of the adult AIDS cases and 22% of the adult HIV cases.

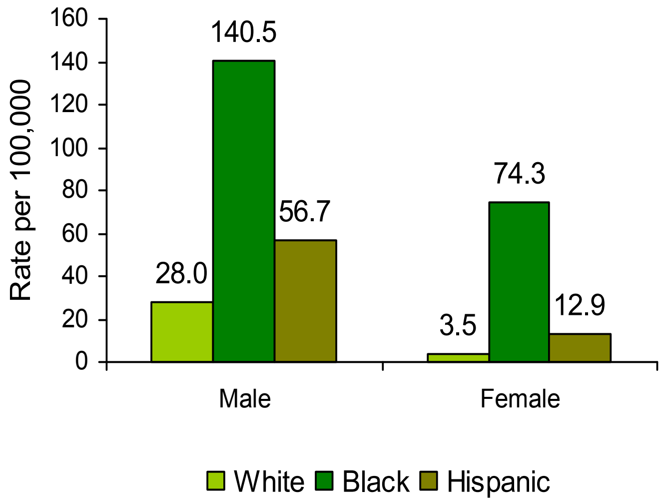
Figure 11. Proportion of Adult AIDS and HIV Cases by Race and Ethnicity, Florida, 2010



* 2010 Florida Population Estimates, Adults (Ages 13+), DOH, Office of Planning, Evaluation & Data Analysis
† Other includes Asian/Pacific Islanders, Native Alaskans/American Indians and mixed races.

Black men and, to an even greater extent, black women are over-represented in the HIV epidemic (Figure 12). The HIV case rate for 2010 is five times higher among black men than among white men. Among black women, the HIV case rate is 15 times higher than among white women. Hispanic male and Hispanic female rates are twice as high as the rates among their white counterparts.

Figure 12. Adult* HIV Cases and Rate per 100,000 Population, by Sex, Race, and Ethnicity, Florida, 2010

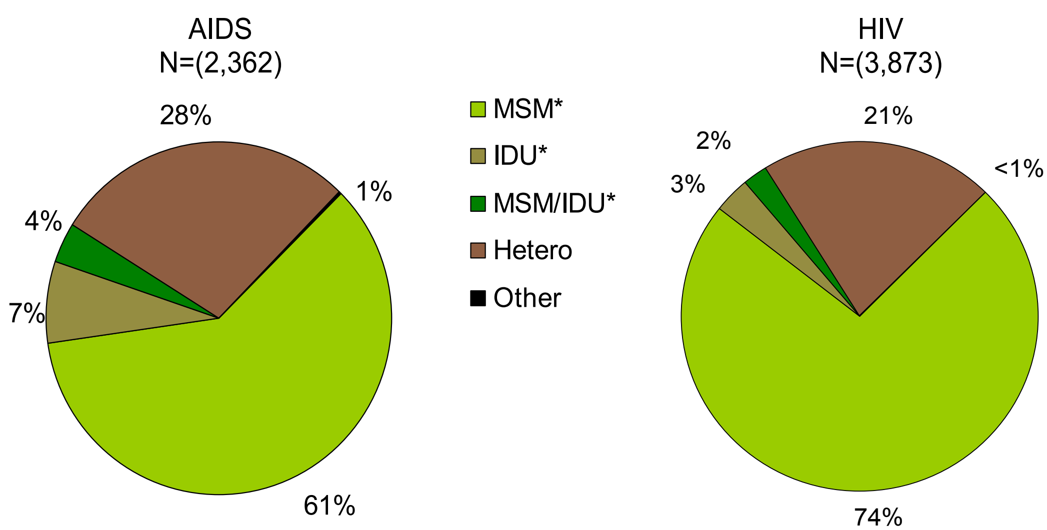


*Adult cases for both HIV and AIDS are defined as those occurring in people 13 years of age and older.

HIV/AIDS Cases by Transmission Category

Among the male AIDS and HIV cases reported for 2010, men who have sex with men (MSM) was the most common risk factor (61% and 74% respectively) followed by cases with a heterosexual risk (28% for AIDS and 21% for HIV) (Figure 13). Recently, transmission among MSM has increased as indicated by the higher percent of MSM among HIV cases compared to AIDS cases, as HIV cases tend to represent a more recent picture of the epidemic.

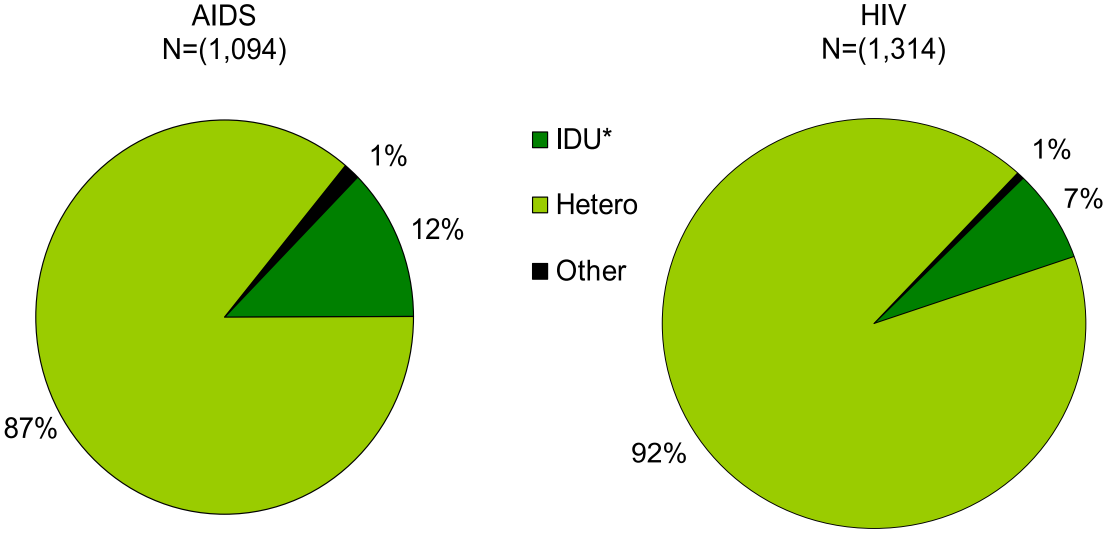
Figure 13. Adult Male AIDS and HIV Cases by Mode of Exposure, Florida, 2010



*Men who have sex with men (MSM), injection drug use (IDU)

Among the female AIDS and HIV cases reported for 2010, heterosexual contact was the highest risk (87% and 89% respectively) (Figure 14).

Figure 14. Adult Female AIDS and HIV Cases by Mode of Exposure, Florida, 2010



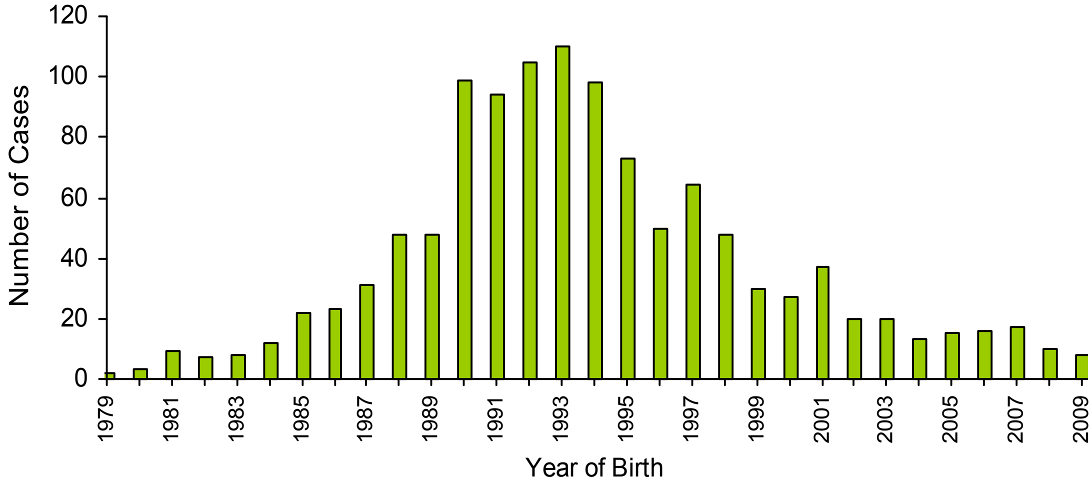
*Injection drug use (IDU)

Perinatal HIV/AIDS Cases

Of the 1,167 perinatally infected babies born in Florida from 1979 through 2009 (most complete year), two were born as early as 1979 (Figure 15). Since that time, the birth of HIV-infected babies continued to rise through 1993. In April 1994, the U.S. Public Health Service released guidelines for zidovudine (ZDV) also known as azidothymidine (AZT), used to reduce perinatal HIV transmission, and in 1995 recommendations for HIV counseling and voluntary testing for pregnant women were published. The mandatory offering of HIV testing to pregnant women became law in Florida in October 1996. Since then, the percent of perinatally infected children who received ZDV or whose mothers received ZDV has increased markedly. Through enhanced perinatal surveillance systems, it has been documented that ZDV use among exposed infants and mothers of HIV-infected children has increased at the prenatal, intrapartum, delivery and neonatal stages.

Prevention of perinatal HIV remains a very high priority in Florida. In the past few years, the use of other medical therapies, including protease inhibitors, has supplemented the use of ZDV for both infected mothers and their babies. The use of these medical therapies has been accompanied by a decrease in the number of perinatally HIV-infected infants and is responsible for the dramatic decline in perinatally acquired HIV/AIDS since 1994. Furthermore, numerous initiatives have contributed to the reduction in these cases. Major initiatives include: seven Targeted Outreach to Pregnant Women Act (TOPWA) programs, three perinatal nurses located in the most heavily impacted counties, social marketing, and provider education. These initiatives have helped to further educate local providers in the importance of testing pregnant women for HIV and then offering effective treatment during the pregnancy and at delivery to further decrease the chances of vertical transmission. As a result, significant decreases in annual perinatal HIV-infected births have been observed in Florida since 1997, with a leveling trend from 2002 through 2007 followed by another sharp decrease in 2008 and 2009. In summary, these successful initiatives have resulted in a 94% decline in HIV-perinatally infected births in Florida from 1993 (N=110) to 2009 (N=8).

Figure 15. Perinatal HIV/AIDS Cases by Year of Birth, Born in Florida, 1979-2009 (N=1,167)



Prevalence Estimate of HIV Infection in the U.S. and Florida
Assessment of the extent of the HIV epidemic is an important step in community planning for HIV prevention and HIV/AIDS patient care. The HIV prevalence estimate, the estimated number of persons living with HIV infection, includes those living with a diagnosis of HIV or AIDS and those who may be infected but are unaware of their serostatus. Approximately 1,039,000-1,185,000 persons are currently living with HIV infection in the U.S. Florida has consistently reported 10-12% of the national AIDS morbidity and currently accounts for 11% of all persons living with AIDS in the U.S. (Table 1). The Department of Health now estimates that approximately 135,000 persons, or roughly 11.7% of the national total, are currently living with HIV infection in Florida as of the end of 2009.

As compared to national data, Florida has a slightly higher proportion of women infected with HIV (30%) compared to the U.S. (27%). Florida has similar patterns of HIV-infected cases among blacks (49%) compared to the U.S. (48%) and among MSM (44% vs. 46%). However, Florida has a far higher proportion of HIV-infected cases among heterosexuals (39% vs. 28%) and a much lower proportion among injection drug users (IDU) (11% vs. 19%) compared to the U.S.

Table 1. Persons Living with HIV Infection in the U.S. (2008)* and Florida (2009)

	U.S.	Florida
Total Cases	663,084	93,053
Male	73%	70%
Female	27%	30%
White	33%	30%
Black	48%	49%
Hispanic	17%	19%
Other	3%	2%
MSM†	46%	44%
IDU†	19%	11%
MSM/IDU†	5%	4%
Heterosexual	28%	39%
Other	2%	2%

Source: U.S. Data: CDC, HIV Surveillance Report, 2009, Vol. 21, Table 15a
Florida Data: eHARS, alive and reported cases through 2009, as of 06/03/10
*Estimated for the 40 states with confidential name-based HIV infection reporting
† Men who have sex with men (MSM), injection drug use (IDU)

Prevention

Because the most common ways HIV is transmitted are through anal or vaginal sex, or sharing drug injection equipment with a person infected with HIV, it is important to take steps to reduce the risks associated with these. They include:

- Know your HIV status. Everyone between the ages of 13 and 64 should be tested for HIV at least once. If you are at increased risk for HIV, you should be tested for HIV at least once a year.
  - If you have HIV, you can get medical care, treatment, and supportive services to help you stay healthy and reduce your ability to transmit the virus to others.
  - If you are pregnant and find that you have HIV, treatments are available to reduce the chance that your baby will have HIV.
- Abstain from sexual activity or be in a long-term mutually monogamous relationship with an uninfected partner.
- Limit your number of sex partners. The fewer partners you have, the less likely you are to encounter someone who is infected with HIV or another STD.
- Correct and consistent condom use. Latex condoms are highly effective at preventing transmission of HIV and some other sexually transmitted diseases. “Natural” or lambskin condoms do not provide sufficient protection against HIV infection.
- Get tested and treated for STDs and insist that your partners do too.
- Male circumcision has also been shown to reduce the risk of HIV transmission from women to men during vaginal sex.
- Do not inject drugs. If you inject drugs, you should get counseling and treatment to stop or reduce your drug use. If you cannot stop injecting drugs, use clean needles and works when injecting.
- Obtain medical treatment immediately if you think you were exposed to HIV. Sometimes, HIV medications can prevent infection if they are started quickly. This is called post-exposure prophylaxis.
- Participate in risk reduction programs. Programs exist to help people make healthy decisions, such as negotiating condom use or discussing HIV status.

Florida's comprehensive HIV prevention program provides high-quality culturally appropriate prevention and education services to Florida's at-risk and HIV-infected populations. The program's overarching goals include reducing the number of new HIV infections, increasing the proportion of HIV-infected persons who know their status, linking HIV-infected persons to care and support services, and reducing risky behaviors that might lead to HIV/STD infection.

Our comprehensive program has multiple components, each designed around evidence-based models that are targeted, monitored, and evaluated to ensure maximum effectiveness. The HIV prevention community planning process provides a voice for persons affected by and infected with HIV. The process is designed to allow information to flow from the top down and from the bottom up and to ensure that all of our prevention activities are aligned with our comprehensive prevention plan.

References

Centers for Disease Control and Prevention, "Basic Information about HIV and AIDS," available at: http://www.cdc.gov/hiv/topics/basic/index.htm.

Additional Resources

Additional information about HIV and AIDS can be found on the CDC's website in English and Spanish at: http://www.cdc.gov/hiv/topics/basic/index.htm.

Please visit the Bureau of HIV/AIDS's website to access additional reports as well as locate services across the state at: http://www.doh.state.fl.us/disease_ctrl/aids/index.html.

Arsenic Poisoning

Disease Abstract

Arsenic poisoning became a reportable condition in Florida on November 24, 2008. There were twelve cases of arsenic poisoning reported during 2010. Counties that reported cases are Bay (1), Broward (2), Brevard (1), Charlotte (1), Marion (1), Martin (1), Pasco (1), Pinellas (2), Polk (1), and St. Lucie (1). Cases were predominantly in males (8 of 12). Cases ranged from 33 to 79 years of age. The mean and median age of cases was 59.3 and 58.5 respectively. Among the twelve reported cases, eight were among whites and three non-whites, and one was of unknown race. Only six cases had ethnicity information recorded, of which two were reported as Hispanic.

Most arsenic-induced toxicity in humans is due to exposure to inorganic arsenic. Organic arsenic found in fish is not believed to be toxic. Total arsenic tests do not distinguish between organic and inorganic arsenic (the more toxic form). For this reason, positive total arsenic laboratory test results from specimens taken within 72 hours of consumption of seafood do not meet the laboratory criteria for diagnosis.

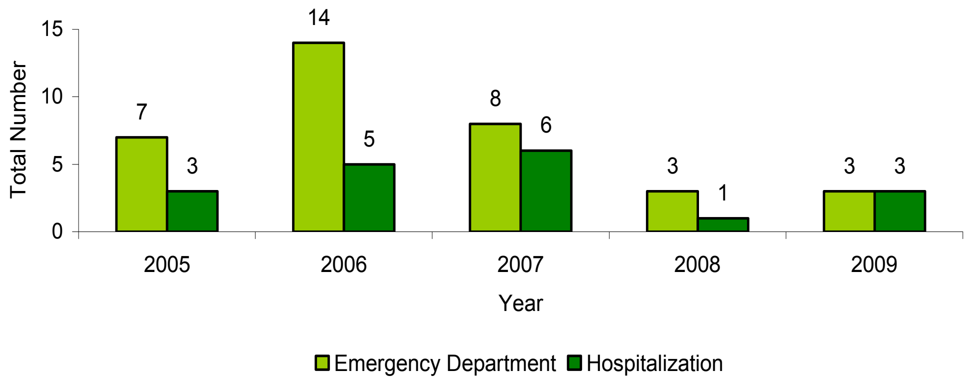
Common sources of potential inorganic arsenic exposure in Florida are chromated copper arsenate (CCA)-treated wood, tobacco smoke, certain agricultural pesticides, and some homeopathic and naturopathic preparations, and folk remedies. In addition, arsenic is a naturally occurring contaminant found in water in certain areas of Florida, affecting (unregulated) private drinking wells in particular. Nine cases had unintentional exposure, one was intentional, and two were of unknown intent. The source of arsenic exposure was unknown for two cases (16.67%). The sources reported for the remaining cases were exposure to agricultural pesticides (3), vitamin supplements (2), CCA-treated wood (1), well water (1), cigarette smoke (1), spray paint (1), and work in the mining industry (1). Among the 12 cases only two were hospitalized.

Analysis of Varied Data Sources for Arsenic Poisoning Events 2005 – 2009

In order to better estimate the burden of arsenic related poisonings, de-identified hospitalization and emergency department (ED) visit data from the Agency for Healthcare Administration, and mortality data from the Office of Vital Statistics were searched for arsenic-related poisonings using relevant International Classification of Disease (ICD) codes. Selected codes were E985.1, E950.8, E980.8, E866.3 for ED visits and T57.0 for deaths. The data was extracted for one or more ICD codes present in the primary or secondary diagnosis fields from years 2005 through 2009 (the most recent year for which data was available).

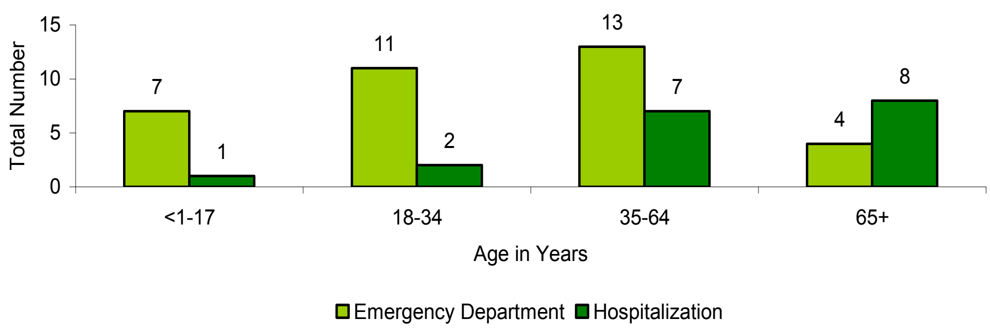
There were a total of 35 ED visits and 18 hospitalizations from 2005 through 2009 where information about arsenic poisoning was present in the record (Figure 1). No arsenic-related deaths were recorded during this time. Due to the lack of personal identifiers, reports identified in ED visit, and hospitalization data were not matched with cases identified in Merlin data and may not be unduplicated.

Figure 1. Emergency Department Visits and Hospitalizations for Arsenic Poisoning by Year, Florida, 2005 to 2009



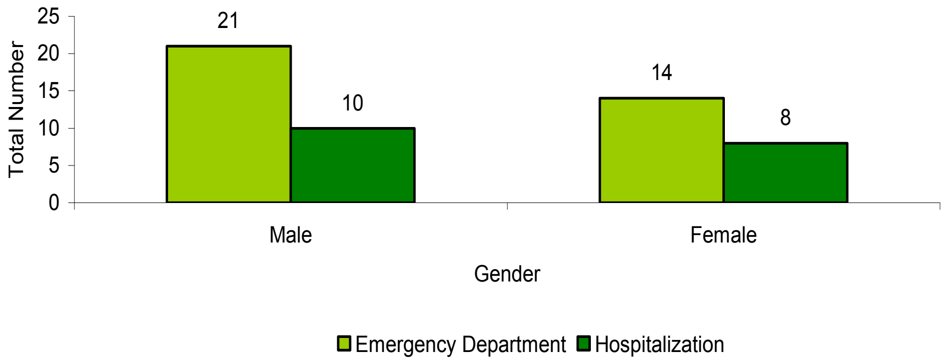
The majority of the ED visits were among adults aged 18 to 34 years (31.4%, N=11) and aged 35 to 64 years (37.1%, N=13). The majority of hospitalizations were also among adults, with 80% of all cases among those aged 35 to 64 years (38.9%, N=7) and those aged 65 years and above (44.4%, N=8) (Figure 2).

Figure 2. Emergency Department Visits and Hospitalizations for Arsenic Poisoning by Age Group, Florida, 2005 to 2009



Patients were primarily white, with only two ED visits and two hospitalizations among Black/African Americans. Hispanic ethnicity was reported for six individuals (three ED visits and three hospitalizations). Males represent 60% (N=21) of all ED visits and 55.6% (N=10) of hospitalizations.

Figure 3. Emergency Department Visits and Hospitalizations for Arsenic Poisoning by Gender, Florida, 2005 to 2009



Prevention

The Florida Department of Health performs surveillance for arsenic poisoning and provides education regarding exposure prevention.

According to Florida statute, public water supplies must be tested for arsenic. Florida drinking water standards for arsenic set the minimum concentration level (MCL) at 10 micrograms per liter (μg/L). Drinking water from private wells, particularly in areas with known high arsenic concentrations in ground or well water, should be tested by the homeowner specifically for arsenic.

Prevention tips for arsenic exposure:

- If your drinking water source is a private well, and you suspect higher arsenic concentrations, have your well water tested. Use bottled water for drinking until the well is shown to be safe or until appropriate water filtration systems are put in place to remove the arsenic.
- Stop smoking. Cigarettes contain arsenic.
- Ensure a well balanced diet rich in selenium, other antioxidants, and folate.
- When using chromated copper arsenate (CCA)-treated lumber, follow the warnings regarding the wearing of personal protective equipment such as gloves, eye, and respiratory protection.
- Have children wash their hands after playing on CCA-treated lumber play equipment.
- Consider annual application of a sealant on any existing CCA-treated lumber surfaces.
- Limit sun exposure and use sunscreen to help decrease the risk of skin cancer. Exposure to arsenic and UVB radiation together may further increase the risk of developing skin cancer.
- Discuss your concerns regarding arsenic and prevention of hazardous exposures at the workplace with your employer and/or workplace health and safety representative.
- If you think arsenic is making you sick, contact your physician to seek medical assistance and contact your county health department to report arsenic poisoning.

Additional Resources

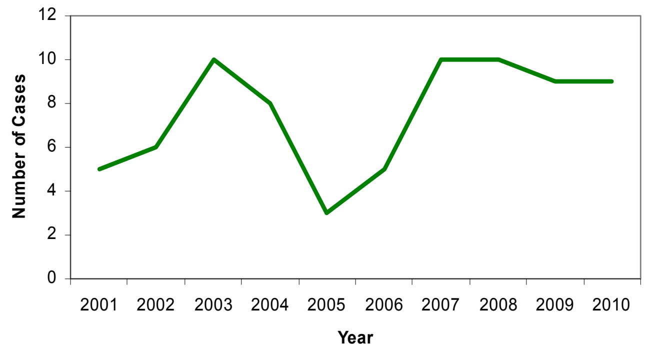
Disease information is available from the Center for Disease Control and Prevention (CDC) at: http://www.bt.cdc.gov/agent/arsenic/.

The Chemical Disease Surveillance Program collects arsenic poisoning data as a part of our disease reporting system. For more information about the program, please visit: http://www.myfloridaeh.com/medicine/arsenic.html.

Brucellosis

Brucellosis: Crude Data	
Number of Cases	9
2010 incidence rate per 100,000	0.05
% change from average 5 year (2005-2009) reported cases	21.6%
Age (yrs)	
Mean	40.9
Median	35
Min-Max	3 - 65

Figure 1. Brucellosis Cases by Year Reported, Florida, 2001-2010



Disease Abstract

From 2001 through 2010, 82 cases of human brucellosis were reported in Florida. Nine cases were reported in 2010, eight confirmed and one probable. The person meeting the probable case definition had illness onset and exposure in 2009 but was not reported until 2010. The individual was epidemiologically linked to a family member whose blood culture tested positive for *Brucella suis*. In addition to the 82 reported cases in Florida, there were investigations associated with non-Florida residents: a *B. abortus* infected patient from Nicaragua identified while visiting Miami-Dade County, an Alabama resident diagnosed with *B. suis* in Escambia County, as well as a Michigan resident and a Maine resident each diagnosed with brucellosis in their states of residence after hunting feral hogs in Monroe and Brevard counties respectively.

Speciation was available for eight of nine cases. Six *B. suis* and two *B. melitensis* isolates were identified. Location of exposure was determined to be in Florida for all except for one child infected with *B. melitensis* whose illness was associated with travel to visit family in Syria. A second person with *B. melitensis* was suspected to have sexually acquired the infection from their spouse. The spouse‘s infection was likely acquired during travel to Greece, where *B. melitensis* is endemic. He visited a rural village and reportedly had febrile symptoms since returning to the U.S., but refused to be tested. Risk factors for the other infected people included eating unpasteurized milk products (imported *B. melitensis*), hunting feral hogs in Florida (six *B. suis* cases), or handling uncooked meat from feral hogs (one *B. suis* case). For three cases, time from onset to diagnosis was greater than six months. Cases occurred throughout the year, as might be expected with a disease with extended incubation periods and a capacity to cause chronic illness (Figure 2). Men accounted for all six infections associated with hunting feral hogs (67%); both *B. melitensis* cases were in females, as was the case associated with handling raw meat from feral hogs. Six cases were in whites (67%), two in blacks (22%), and one was listed as of other race (11%). All cases were in non-Hispanic persons. Affected people ranged in age from 3 to 65 years. Incidence was highest in those aged 25 to 34 years, representing three of the nine cases (Figure 3).

Fifty-eight private laboratory workers or orthopedic surgery personnel in 11 Florida hospitals or laboratories were exposed to *Brucella* in 2010, including 55 high-risk and three low-risk exposures. Of the 11 cases with *Brucella* positive cultures in 2010 (including cases in non-residents mentioned above), eight resulted in at least one laboratory or orthopedic surgery exposure. Rapid communication of suspect culture results to a laboratory by the Sarasota County Health Department likely prevented exposures to personnel in one laboratory. Two of the exposed persons were pregnant; one miscarried but this did not appear to be linked to the *Brucella* exposure. Reasons for laboratory exposures include: *Brucella* was not suspected as the cause of illness (five cases); the clinician suspected *Brucella* but neglected to warn the testing laboratory (two cases); the *Brucella* culture stained Gram positive rather than Gram negative (two cases affecting three laboratories); and the laboratory worker lacked room in the biologic safety cabinet (BSC) to work with the culture, so they worked outside the BSC (one case). Most of the exposed persons accepted the recommended antibiotic prophylaxis and none seroconverted or reported illness.

Figure 2. Brucellosis Cases by Month of Onset, Florida, 2010

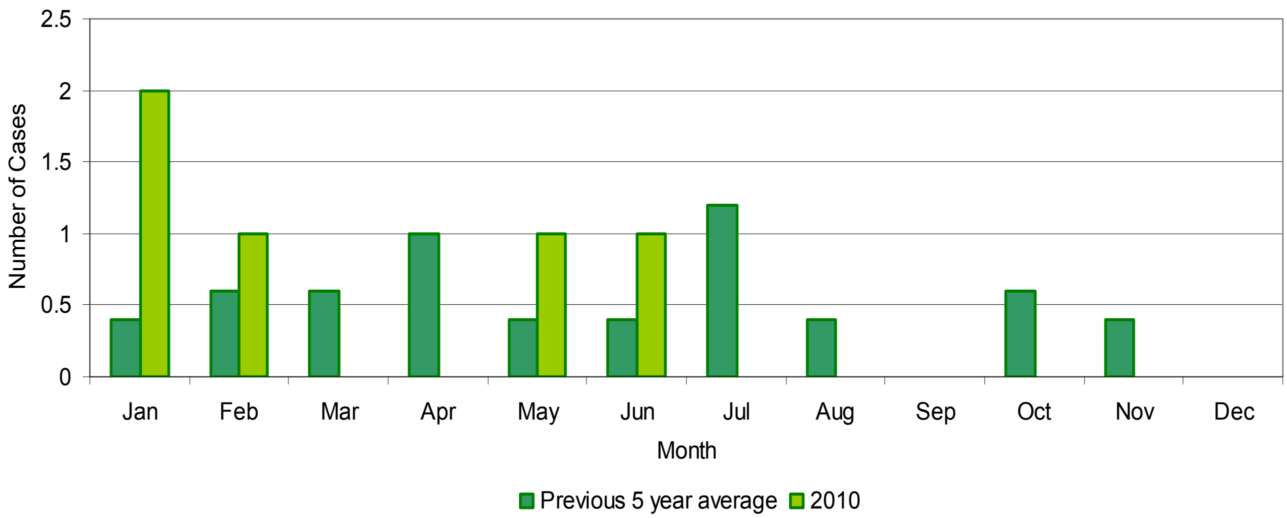
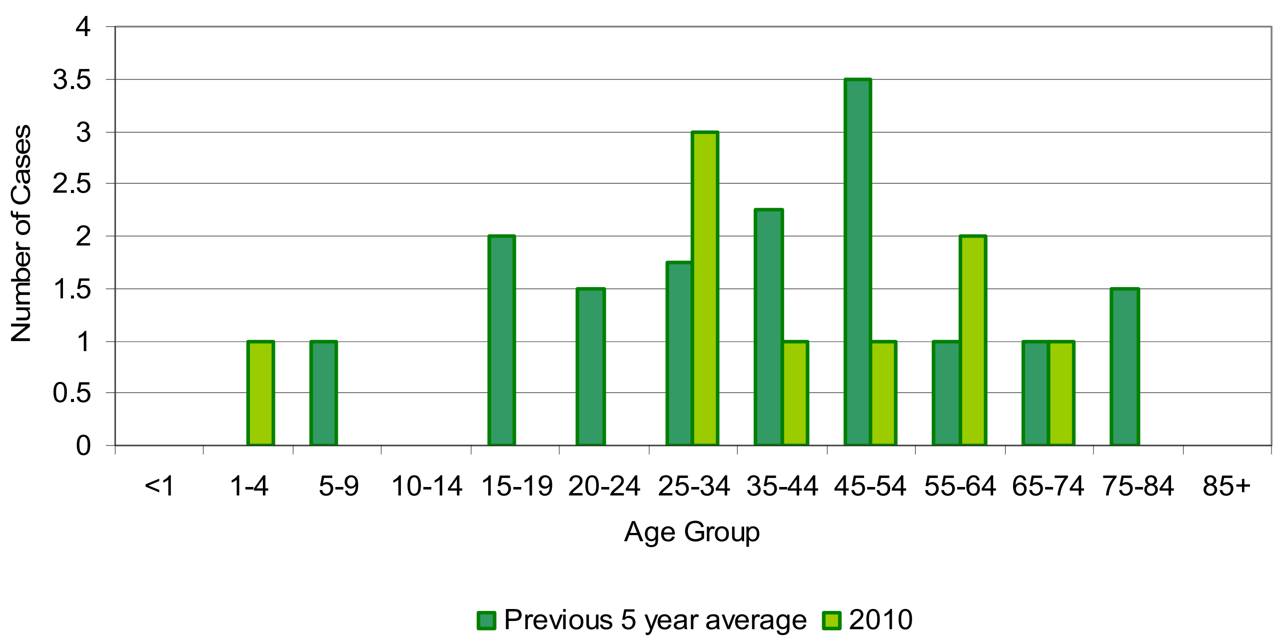


Figure 3. Brucellosis Cases by Age Group, Florida, 2010



Prevention

Prevention can best be accomplished through education of hunters, animal workers, and those handling raw meat from feral swine on proper use of personal protective equipment. Prevention measures include the following strategies:

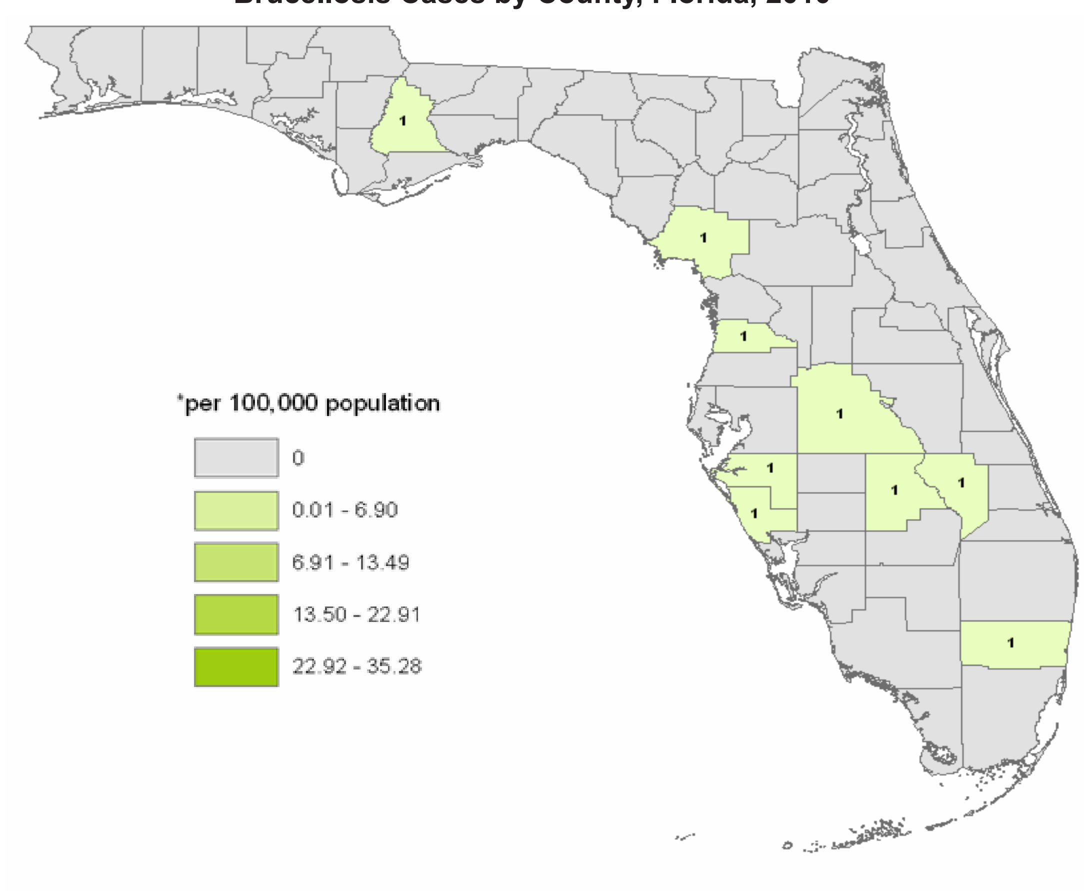
- Wear gloves and other protective clothing.
- Work in properly ventilated areas.
- Dispose of animal carcasses and tissues properly.
- Disinfect contaminated areas.
- Handle modified live vaccines properly.

Educate travelers and the general public about the risks of drinking or eating unpasteurized dairy products, especially products originating in countries where brucellosis is endemic in livestock.

Outreach is recommended for laboratory personnel and orthopedic surgeons to ensure knowledge of appropriate personal protective equipment for specimen handling and surgical procedures (aerosol protection), and clinicians should be reminded to forewarn laboratories working with patient culture samples if *Brucella* is included in the differential diagnosis or if they receive positive serologic results. Laboratories should be periodically reminded of state and federal confirmation and reporting requirements for this select agent.

Continued surveillance and management programs for *Brucella* spp. in domestic livestock will reduce exposure risk from domestic animals in Florida. Surveillance is also important because *Brucella* has the potential for use as a bioterrorism agent.

Brucellosis Cases by County, Florida, 2010



References

Lt. Col. Jon B. Woods (ed.), USAMRIID, *Medical Management of Biological Casualties Handbook*, 6th ed., U.S. Army Medical Research Institute of Infectious Diseases, 2005.

M.J. Corbel, *Brucellosis in Humans and Animals*, World Health Organization Press, Geneva, Switzerland, 2006.

Additional Resources

Centers for Disease Control and Prevention, "*Brucella suis* Infection Associated with Feral Swine Hunting --- Three States, 2007 -- 2008," *MMWR* 2009; 58 (22):618-21.

Information on human brucellosis in Florida can be found at the Florida Department of Health website at: http://myfloridaeh.com/medicine/arboviral/Zoonoses/Zoonotic-brucellosis.html.

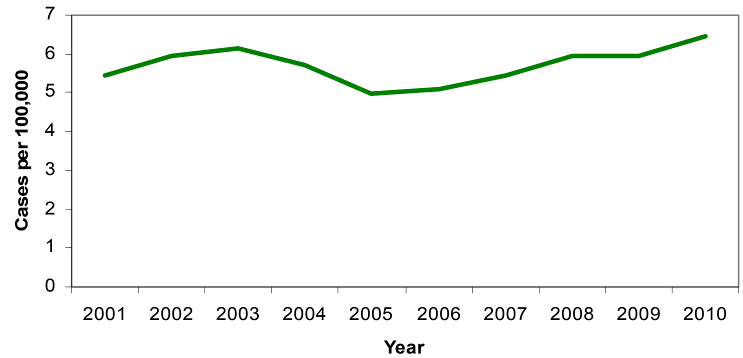
Additional information can also be found at the United States Department of Agriculture, Animal and Plant Health Inspection Services website at: http://www.aphis.usda.gov/animal_health/animal_diseases/brucellosis/.

As well as the CDC website at: http://www.cdc.gov/nczved/divisions/dfbmd/diseases/brucellosis/.

Campylobacteriosis

Campylobacteriosis: Crude Data	
Number of Cases	1,211
2010 incidence rate per 100,000	6.5
% change from average 5 year (2005-2009) reported incidence rate	17.7%
Age (yrs)	
Mean	35.6
Median	34
Min-Max	0 - 98

Figure 1. Campylobacteriosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The incidence rate for campylobacteriosis has remained generally stable since 2001 but has had a slight upward trend since 2005 (Figure 1). In 2010, there was a 17.7% increase in comparison to the average incidence from 2005 to 2009. A total of 1,211 cases were reported in 2010, of which 95.5% were classified as confirmed. The number of cases reported tends to increase in the summer months. In 2010, the number of cases reported exceeded the previous five-year averages for the same time period in all months except May (Figure 2). The highest incidence occurs among infants under one year old and children aged one to four years (Figure 3). Overall, 7.4% of the campylobacteriosis cases reported in 2010 were classified as outbreak-associated, as compared to 7.1% in 2009. The majority (85.7%) of cases were acquired within Florida, though 10.2% were acquired outside of the U.S.

Figure 2. Campylobacteriosis Cases by Month of Onset, Florida, 2010

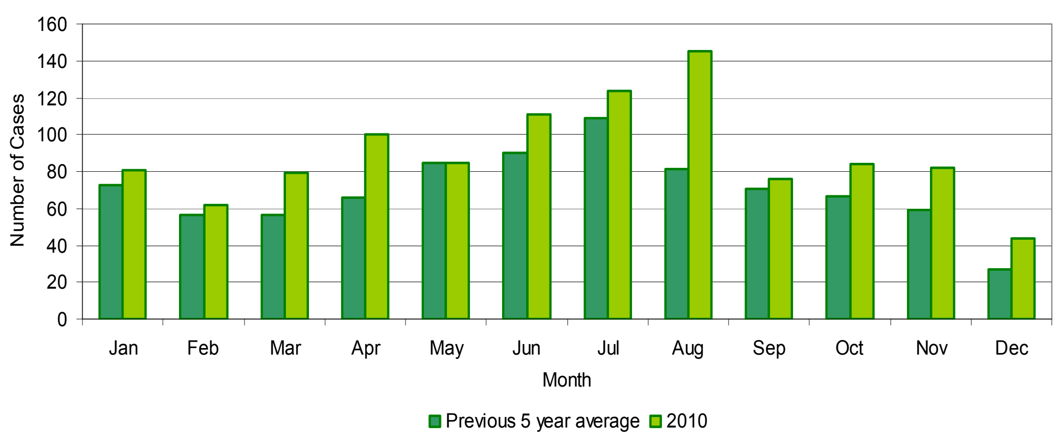
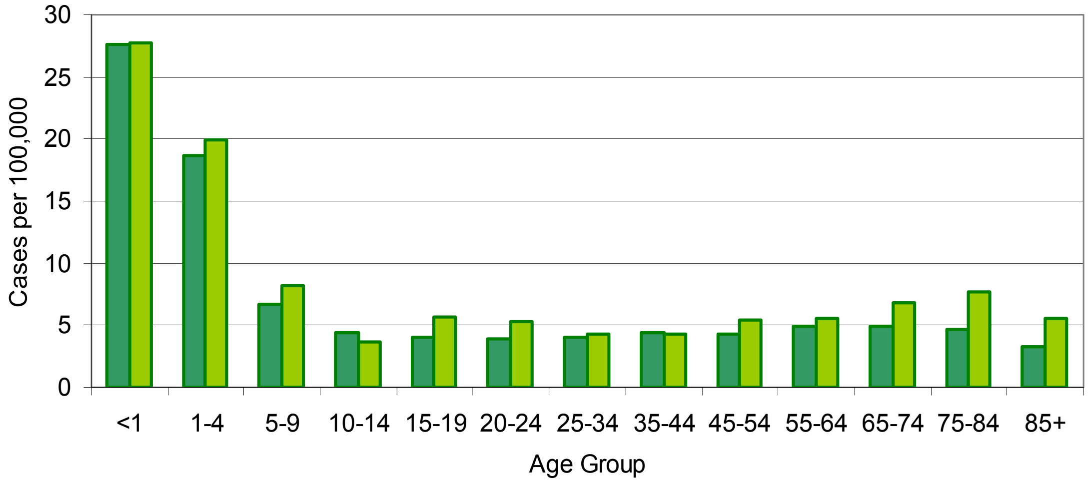


Figure 3. Campylobacteriosis Incidence Rate by Age Group, Florida, 2010



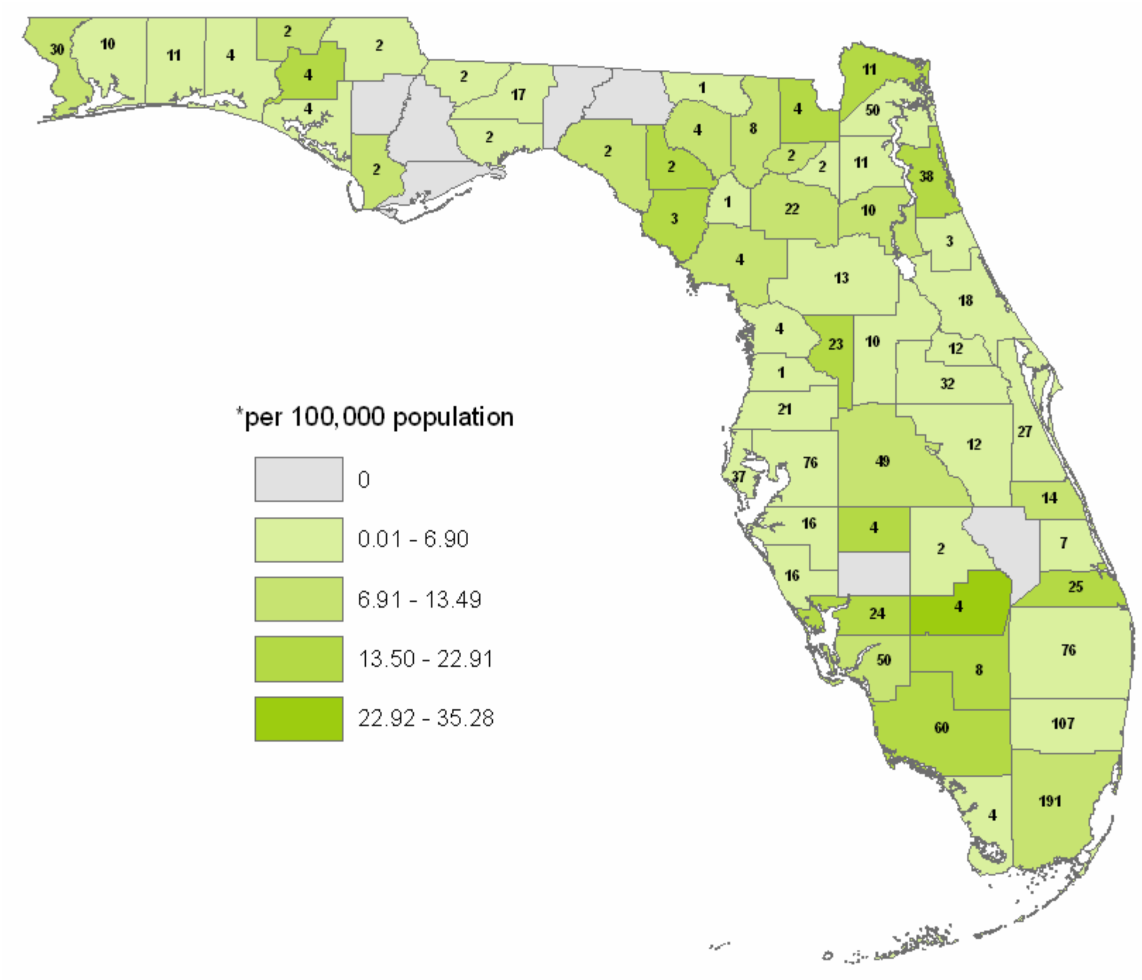
Campylobacteriosis was reported in 60 of 67 counties in Florida (Figure 4).

Prevention

The likelihood of contracting campylobacteriosis can be reduced by following these guidelines:

- Cook all meat products thoroughly, particularly poultry.
- Avoid cross-contamination by making sure utensils, counter tops, cutting boards, and sponges are cleaned or do not come in contact with raw poultry or other meat.
- Do not allow fluids from raw poultry or meat to drip on or touch other foods.
- Wash your hands thoroughly before, during, and after food preparation.
- Consume only pasteurized milk, milk products, or juices. Additionally, it is important to wash your hands after coming into contact with any animals or their environment.

Figure 4: Campylobacteriosis Cases and Incidence Rates* by County, Florida, 2010



Additional Resources
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/nczved/divisions/dfbmd/diseases/campylobacter/.

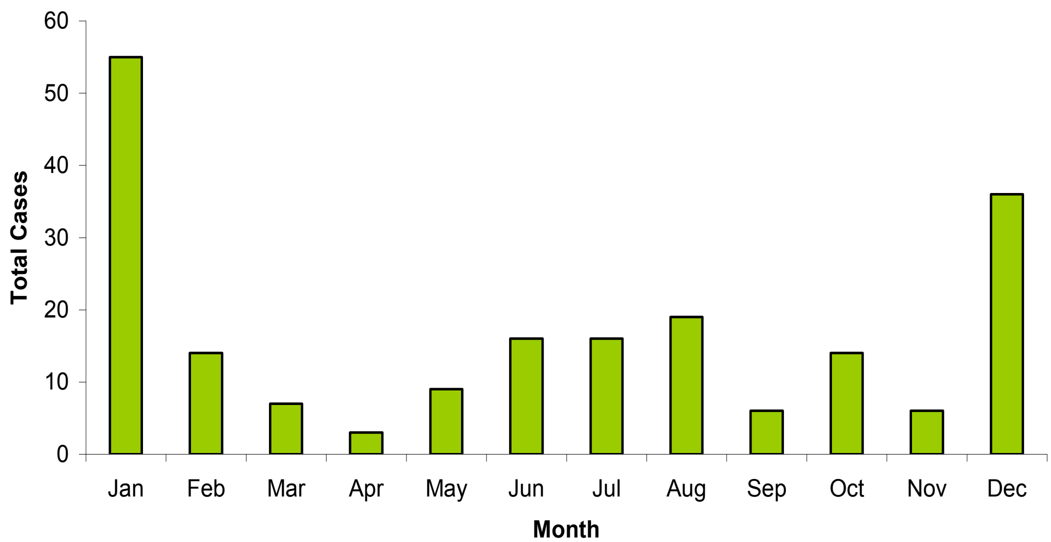
Carbon Monoxide Poisoning

Disease Abstract
Carbon monoxide (CO) poisoning became a reportable condition in Florida on November 24, 2008. All laboratory results of patients with volume fractions ≥ 0.09 (9%) of carboxyhemoglobin (COHb) in blood are also reportable.

Exposure to CO and CO poisonings are routinely monitored in Florida using two main sources of data, the Florida Poison Information Center (FPIC) database and chief complaint data from hospitals participating in the Electronic Surveillance System for Early Notification of Community-based Epidemics (ESSENCE). When a potential case of CO poisoning is identified in either of these data streams, the county health departments (CHD) conduct case follow-up and investigation including the collection of additional situational and risk-related information.

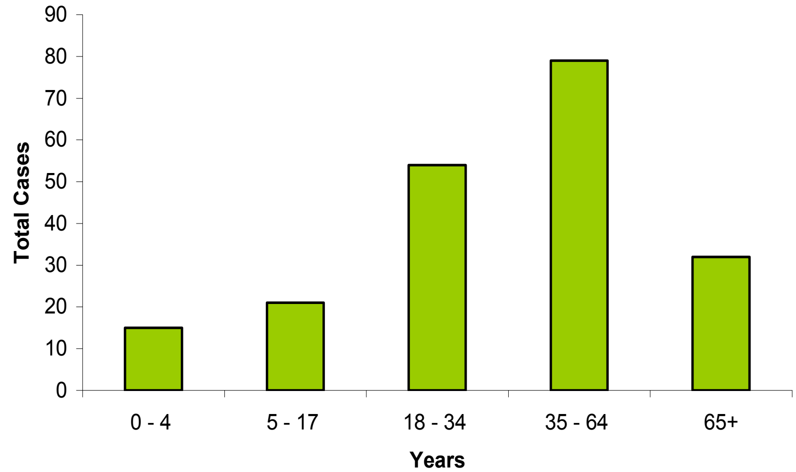
In 2010, there were 201 CO poisoning cases reported: confirmed (161), probable (16) and suspected (24). This is more than four times as many cases as reported in 2009 (43). Cases were not evenly distributed throughout the year. January (55 cases) and December (36 cases) had the highest numbers (Figure 1).

Figure 1. Reported Cases of Carbon Monoxide Poisoning by Month of Exposure, Florida, 2010



The majority of the CO poisonings were reported among those 35 to 64 years of age (N=79, 39.3%). Cases ranged in age from <1 to 92 years, with 39.7 and 38 as the mean and median age respectively. Males represent 55.7% (N=112) of all cases (Figure 2).

Figure 2. Reported Cases of Carbon Monoxide Poisoning by Age Group, Florida, 2010



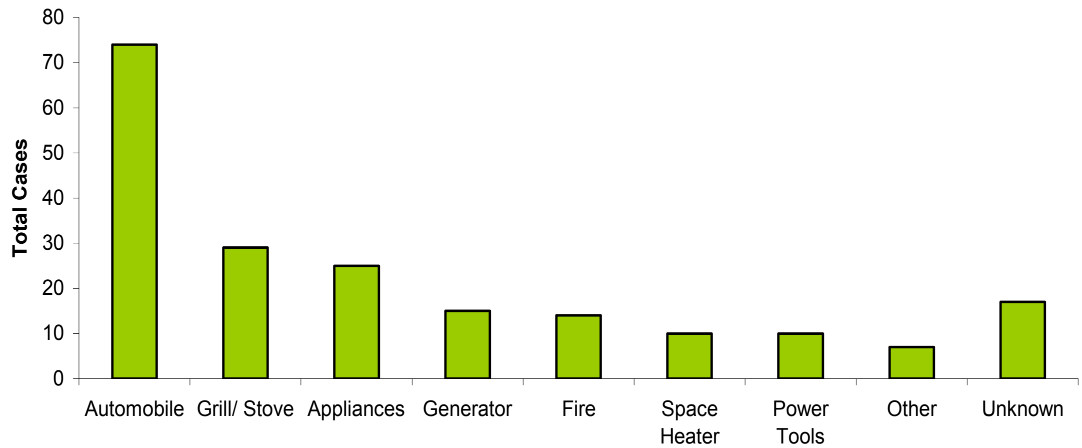
Reported cases were primarily white (N=137, 68.2%), followed by blacks (N=38, 18.9%) and Asian/Pacific Islander (N=11, 5.5%). Thirty-three cases (16.4%) were reported as Hispanic. Among all cases, the majority of CO poisoning cases were unintentional (86.1%, N=173). Only 22 cases (10.9%) were recorded as intentional poisonings.

A cluster is defined as any two or more related cases of CO exposure. Approximately 71.6% (N=144) of the cases were associated with 54 clusters of exposure. More than 773 people were involved in these 54 clusters; but after review, only 144 matched the case definition and were considered reportable. The most common relationship among people involved in CO clusters was family and friends (N=115, 79.9%), followed by neighbors and coworkers (N=21, 14.6%). The relationship between cases was unknown for eight cases (5.6%).

Most of the exposures occurred in residential areas (N=158, 78.6%) followed by the workplace (N=15, 7.5%), commercial dwelling (N=9, 4.5%), lake/river/ocean (N=5, 2.5%), and motel room (N=5, 2.5%). Other locations reported include an auto-shop, vehicle, tent, and parking lot. Exposure site was unknown for three cases. About 8% (N=16) of the cases were work-related and half of them (N=8) involved food handlers. One work-related case reported being a health care worker.

The majority of cases were a result of exposures to exhaust from an automobile (N=74, 36.8 %), portable fuel burning grill/stove (N=29, 14.4%) or fuel burning appliances (N=25,12.4%) (Figure 3). About 75% of the automobile related CO poisoning cases occurred during May, June, July, August, and December. The cases that occurred in Florida's cold weather months were primarily due to inappropriate use of devices for heating. In January, cases were predominantly related to portable fuel burning grills or stoves (N=26), as well as fuel burning appliances (N=13). Similarly, 19.4% of the cases in December were related to space heaters (N=7). This demonstrates that during cold winter months, Floridians used improper heating methods or did not use equipment properly. Past studies show that generator-related CO poisonings increased during hurricane season in Florida. The number of generator-related CO poisoning cases (N= 15) was low in 2010 which correlates to the absence of hurricane land-falls in Florida.

Figure 3. Reported Cases of Carbon Monoxide Poisoning by Exposure Type, Florida, 2010



Among all the cases, 81.6 % received medical care (N=164). Among those who received medical care, 62.2% were hospitalized (N=102). The majority of the cases survived (N=164, 81.6%), 15.4% died and 3% were associated with unknown outcome.

The results of carboxyhemoglobin (COHb) analysis were known for 88% of the cases (N=177). Among all the individuals with COHb levels reported, 83.6% were positive (defined as COHb level greater than or equal to 9%), 3.4% were negative (COHb level less than 1.2%), and 13% were equivocal (COHb level from 1.2% to 9%).

The majority of the confirmed cases were reported from Palm Beach (N=39, 19.4%), Miami-Dade (N=17, 8.5%), Broward (N=15, 7.5%), and Pinellas (N=13, 6.5%) counties.

Prevention
The Florida Department of Health (FDOH) addresses CO exposure and poisoning through surveillance and education.

Prevention tips for CO poisoning:

- Install a CO alarm in your home if you have combustion appliances or an attached garage.
- Be sure all appliances are properly installed and used according to the manufacturer's instructions.
- Have fireplace and combustion heating and ventilation systems, including chimneys, flues, and vents, professionally inspected every year.
- Don't burn charcoal inside a house, garage, vehicle, tent or fireplace.
- Don't use un-vented combustion heaters in enclosed spaces, especially sleeping areas.
- Never leave an automobile running in a closed garage or in a garage attached to the house - even with the garage door open.
- While driving, keep the rear window or tailgate of a vehicle closed, as carbon monoxide from the exhaust can be pulled inside.
- If you suspect you are experiencing any symptoms of CO poisoning, open doors and windows, turn off gas appliances, and go outside. In cases of severe CO poisoning, call 911 emergency services or call the Florida Poison Information Center at 1-800-222-1222.

FDOH posted an educational video on CO poisoning prevention courtesy of the California Air Resources Board at: http://www.youtube.com/watch?v=t5rlyN6LuoU.

Section 553.885, F.S., and 509.211, F.S., require that every building for which a building permit is issued for new construction on or after July 1, 2008 and, which has an enclosed space or room that contains a boiler, shall have an approved operational carbon monoxide alarm installed.

References

"Carbon Monoxide Poisonings after Two Major Hurricanes--Alabama and Texas, August - October 2005," *MMWR* Mar 10 2006; 55 (9):236-239.

"Carbon Monoxide Exposures after Hurricane Ike - Texas, September 2008," *MMWR* Aug 14 2009; 58 (31):845-849.

Sauvageau A, Racette S, Yesovitch R, "Suicide by Inhalation of Carbon Monoxide in a Residential Fire," *J Forensic Sci.,* Jul 2005; 50 (4):937-938.

Goldfrank, Lewis R.; Flomenbaum, Neal E.; Lewin, Neal A.; Howland, Mary Ann; Hoffman, Robert S.; Nelson, Lewis S., *Goldfrank's Toxicologic Emergencies* (7th Edition), pp: 1610 & 1480, McGraw-Hill, 2002.

Additional Resources

Chemical Disease Surveillance Program at:
http://www.myfloridaeh.com/medicine/Chemical_Surveillance/index.html.

CO Hospitalization and Death Data available at Florida Charts at:
http://www.floridatracking.com/HealthTrackFL/DealIndicator.aspx?PageId=11200.

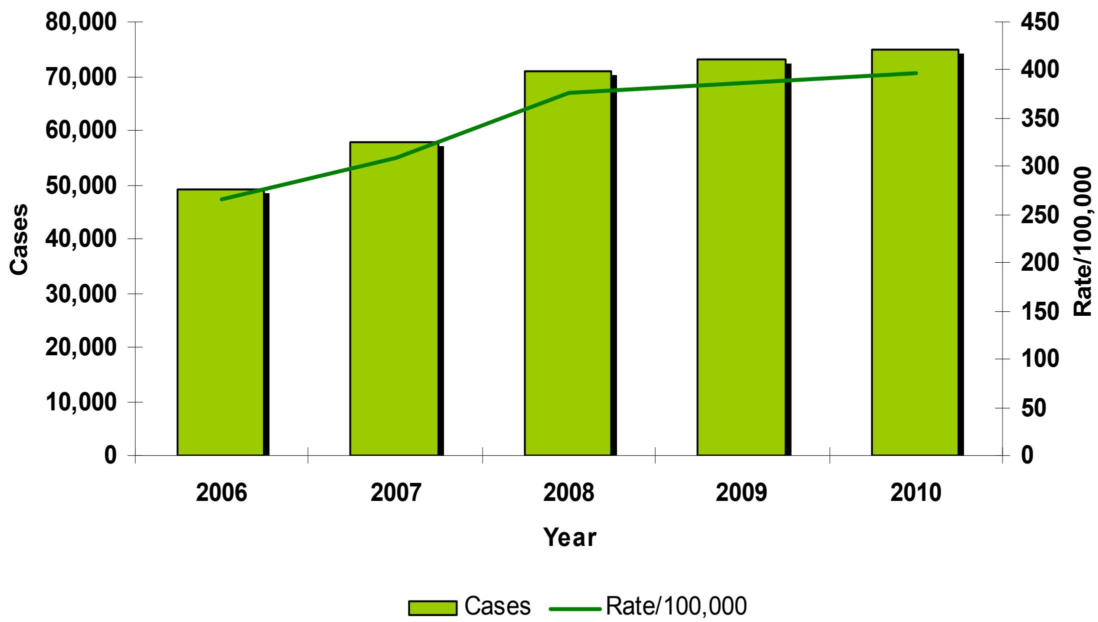
CO Brochures in English, Spanish and Creole available at:
http://www.myfloridaeh.com/community/indoor-air/carbon.htm.

Chlamydia

Disease Abstract

Chlamydia, caused by the bacterium *Chlamydia trachomatis*, became reportable in Florida in 1993. Trends show that since the disease became reportable, it is now the most common reported sexually transmitted disease (STD) in Florida and the nation. The prevalence of chlamydia is highest among those under 25 years of age and in specific populations such as women and minorities. Chlamydia infection can be asymptomatic. Because of this, annual testing for chlamydia is recommended for all sexually active adolescents and young women up to age 25. Chlamydial infections are geographically widespread and continue to increase each year. In Florida, chlamydia accounts for 75% of all reportable STDs. The 2010 case rate of 397.8 per 100,000 population is the highest of the past five years. In 2010, 74,745 chlamydia cases were reported.

Figure 1. Reported Cases of Chlamydia by Year, Florida, 2006-2010



The most prominent risk factor for chlamydial infection is age. Persons between the ages of 15-24 years represent only 13% of Florida's population in 2010 yet account for 71% (53,012) of all reported chlamydia cases in Florida. Also, 29% (215 of 746) of youth and young adults with a known HIV positive status had a new chlamydia infection in 2010.

Table 1. Reported Chlamydia Case Court and Rate per 100,000 Population, by Selected Age Groups, Florida, 2010

Age Group	Cases Reported	Rate
15-19	24,424	2,046.8
20-24	28,588	2,362.9
25-29	11,783	1,003.4
30-34	4,613	416.4
35-39	2,184	188.2
40-44	1,122	91.7

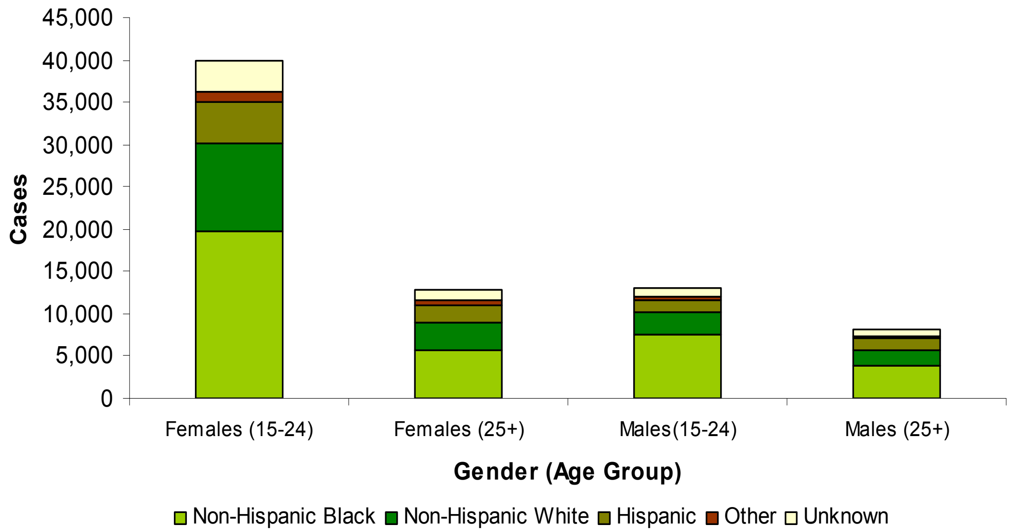
The vast differences in the distribution of chlamydia infections by age are caused by higher biological susceptibility to STD infections, prevalence of risky sexual behaviors, and a combination of other factors, which leave adolescents and young adults disproportionately affected with chlamydia compared to older populations. Therefore, greater prevention and education emphasis has been placed on adolescents and young adults.

Older people are also susceptible to contracting a STD due to perceived decreased susceptibility coupled with an actual increase in risk due to less effective immune systems and biological vulnerability after menopause. People in older age groups are also less likely to be screened for these diseases and therefore, might pass on the disease to more people before becoming aware of their disease status. From 2006 to 2010, chlamydia cases among individuals over the age of 55 have increased by 84.5%. The number of cases reported between 2006-2010 (N=1,153) in people 55 years and older is much less than for the 15-24 age group. As people age the immune system becomes less effective, putting older adults at high risk for STDs that may cause other health problems. More than 60% of people 55 years and older are sexually active at least once a month, and yet, they are rarely considered to be at risk for an STD. People who are no longer sexually active may still have chronic infection with an STD for which they were never treated or screened, which could be mistaken for other diseases of aging.

In 2010, women accounted for more than 70% of reported chlamydia cases. National trends indicate chlamydia infections are most often detected in women under the age of 25. Florida statistics mimic this trend; women under the age of 25 account for half of reported morbidity. In 2010 and previous years, the highest number of cases in women were reported in those between the ages of 15 to 24 years (Figure 2). The highest rate among women was in the 20 to 24 year age group (3,432.2 per 100,000) and the rate for women in the 15 to 19 year age group was slightly lower at 3,347.9 per 100,000 population. The high rates of chlamydia seen in women may be due in part to improved recognition of the disease because of more frequent screenings for chlamydia in women than in men.

Chlamydia rates in men were lower overall than in women, but similar age distributions are seen in both genders. Adolescents and young adults account for the majority of reported cases by age (men 61%, women 75%). Among men, those aged 20 to 24 years had the highest rate (1,334.4 per 100,000), followed by men between the ages of 15 to 19 years with a rate of 797.8 per 100,000 population. Men between the ages of 25 to 29 years accounted for 20% of chlamydia cases reported among men, whereas women in the same age cohort accounted for 15% of chlamydia cases.

Figure 2. Reported Cases of Chlamydia by Selected Age Groups, Gender, and Race/Ethnicity, Florida, 2010



Non-Hispanic blacks account for 50% of all reported chlamydia cases in 2010, non-Hispanic whites accounted for 24.3%, Hispanics accounted for 13.5%, and people who self reported as other or unidentified accounted for 12.1% of cases. Compared to non-Hispanic whites and Hispanics, non-Hispanic black female adolescents had the highest rates of chlamydia in Florida. The case rate (6,948.4 per 100,000) for non-Hispanic black women 15 to 24 years old was four times as high as the second highest rate (1,723.4 per 100,000) in non-Hispanic white females 15 to 24 years old. Cases of chlamydia have increased in both non-Hispanic blacks (15.2%) and non-Hispanic whites (31.4%) from 2009 to 2010, whereas cases with unidentified race or ethnicity data decreased by 54.8%. These changes were likely due to improved reporting practices rather than an actual change in demographics of cases.

Prevention

According to the Centers for Disease Control and Prevention (CDC), the surest way to avoid transmission of any STD is to abstain from sexual contact, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected. CDC recommends yearly chlamydia testing of all sexually active women age 25 or younger, older women with risk factors for chlamydial infections, such as those who have a new sex partner or multiple sex partners, and all pregnant women. When used consistently and correctly, a latex condom can reduce the risk of transmission of chlamydia. If there are any genital symptoms such as an unusual sore, discharge with odor, burning during urination, or bleeding between menstrual cycles could mean a chlamydia infection is present. If a woman or man has any of these symptoms, they should stop having sex and consult a health care provider immediately. Treating chlamydia early in women can prevent pelvic inflammatory disease. Women and men who are told they have a chlamydial infection and are treated for it should notify all of their recent sex partners (sex partners within the preceding 60 days) so they can see a health care provider and be evaluated for any possible STD exposure. Sexual activity should not resume until all sex partners have been examined and, if necessary, treated.

References

The American College of Obstetricians and Gynecologists, *Primary and Preventive Care: Periodic Assessments - Routine Screening Recommendations*, 2011.

Lindau ST et al., (2007), “A Study of Sexuality and Health Among Older Adults in the United States,” *N England J Med,* 357 (8):762-74.

Cholera

Disease Abstract

In 2010, four laboratory-confirmed cases of cholera were reported, for a statewide incidence rate of 0.02 cases per 100,000 population. A confirmed case of cholera is defined as a clinically compatible illness in a person from whom toxigenic *Vibrio cholerae* O1 or O139 has been isolated from stool or vomitus, or who has serologic evidence of recent infection. *V. cholerae* O1 serotype Ogawa was isolated from stool specimens of all four patients. Pulsed-field gel electrophoresis at the Centers for Disease Control and Prevention linked these cases to the outbreak of cholera in Haiti that was confirmed on October 21, 2010. All cases in Florida were associated with recent travel from Haiti. Approximately 45% of all Haitian immigrants to the U.S. reside in Florida. One patient was a resident of Haiti relocating to Florida and three patients traveled to Haiti to visit family and friends. Two patients reported exposure to lake water and one of these also drank water and bathed at a community well. Dates of illness onset ranged from October 23 to November 29, 2010. Patients ranged in age from 9 to 84 years; all were female. Symptoms included diarrhea, abdominal pain or cramping, nausea, and vomiting. All patients were treated with antibiotics and intravenous rehydration. Three of four patients were hospitalized; none died. In 2010, cases were reported in Broward (2), Collier (1), and Orange (1) counties. No local transmission was identified among household contacts in Florida.

Please see the “Cholera” section in the Summary of Notable Outbreaks and Case Investigations, 2010 for additional descriptions of two of the 2010 cases. Additional information can be accessed through the Morbidity and Mortality Weekly Report article listed in the Additional Resources section.

Prevention

Travelers to cholera-affected countries can reduce the risk of cholera by following the five prevention messages listed below.

- Drink and use safe water.
- Wash your hands often with soap and safe water.
- Use latrines or bury your feces; do not defecate in any body of water.
- Cook food well (especially seafood), keep it covered, eat it hot, and peel fruits and vegetables.
- Clean up safely—in the kitchen and in places where the family bathes and washes clothes.

Cholera vaccines are not currently available in the United States and CDC does not recommend cholera vaccines for most travelers.

References

Buchannan AB, Albert NG, Beaulieu D, *The Population with Haitian Ancestry in the United States: 2009*, U.S. Census Bureau, Washington, District of Columbia, 2010.

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/cholera/index.html.

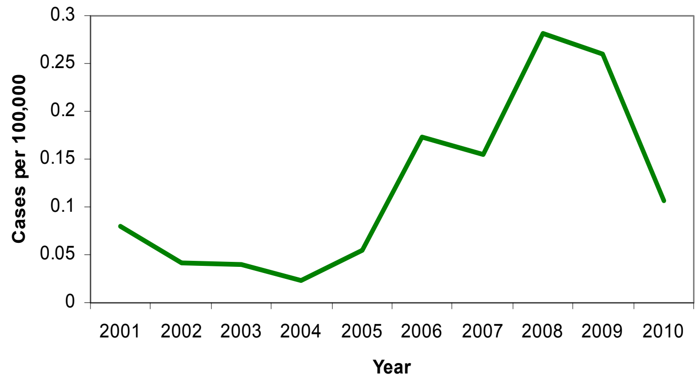
Five prevention messages were taken from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/cholera/prevention.html.

A summary of the 2010 disease activity in Haiti, the Dominican Republic, and Florida can be found at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5950a1.htm.

Ciguatera Fish Poisoning

Ciguatera: Crude Data	
Number of Cases	20
2010 incidence rate per 100,000	0.1
% change from average 5 year (2005-2009) reported incidence rate	-42.5%
Age (yrs)	
Mean	40.4
Median	40
Min-Max	23 - 62

Figure 1. Ciguatera Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Little is known about the epidemiology of ciguatera fish poisoning (CFP) in the U.S. as a whole. This may be due to lack of recognition among the medical community, the non-fatal nature of the disease, and the short duration. Case-finding in Florida is thought to be more complete, although it is likely that there is significant under-reporting.

In 2010, a total of 20 CFP cases (annual rate = 0.1 per 100,000) were reported, which was a decrease in cases compared to 2009 when 49 cases (rate = 0.26) were reported and 2008 when 53 cases (rate=0.3) were reported. Seventy percent (14) of cases were male and 30% (6) were female. Additionally, 70% (14) were of a white Hispanic race/ethnicity and 30% (6) were of a white non-Hispanic race/ethnicity. The counties where cases were reported included: Miami-Dade (15), Leon (3), Brevard (1), and Broward (1). The three cases from Leon County were a part of a single outbreak associated with a local restaurant where the affected people consumed escolar. In Miami-Dade, multiple CFP outbreaks were reported, which included two cases in people who consumed a 60-pound grouper caught near Salt Cay, three who consumed a barracuda caught near Marathon Key, and four who consumed a 12-pound barracuda. The remaining cases were not associated with an outbreak. The implicated fish associated with all single and outbreak-associated CFP cases in 2010 included barracuda (12), escolar (3), grouper (3), snapper (1), and multiple fish (grouper and snapper) (1). All 20 cases were acquired in Florida, although the implicated fish originated from many different locations.

Note: The number of outbreak-related cases summarized in the Bureau of Environmental Public Health Medicine summaries may not match Merlin case report numbers. This is due to the fact that outbreaks often include ill people who are not residents of the State of Florida (i.e., visitors who were exposed and got sick while in Florida), or people whose illnesses did not meet the surveillance case definition and were therefore not posted in Merlin. Also, outbreak cases may not match with Merlin across counties (often people cross county boundaries to eat in other counties). Outbreaks are generally reported by county and state of exposure; individual reportable diseases are reported by county and state of residence.

Figure 2. Ciguatera Cases by Month of Onset, Florida, 2010

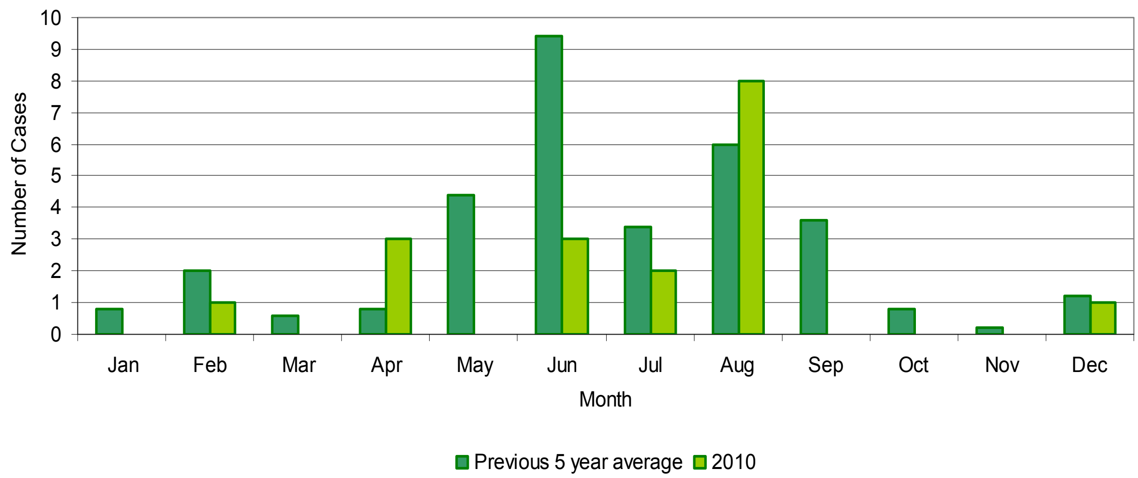
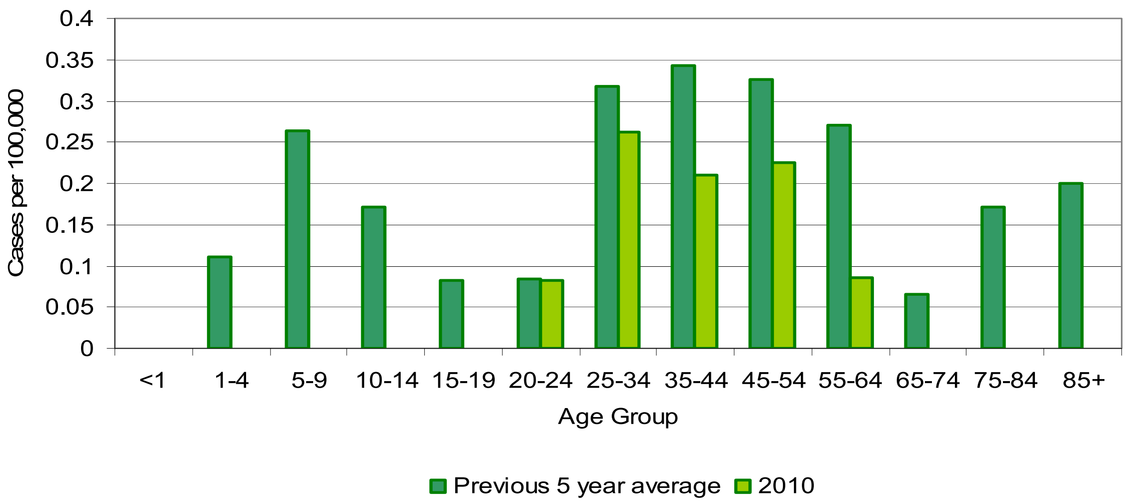


Figure 3. Ciguatera Incidence Rate by Age Group, Florida, 2010



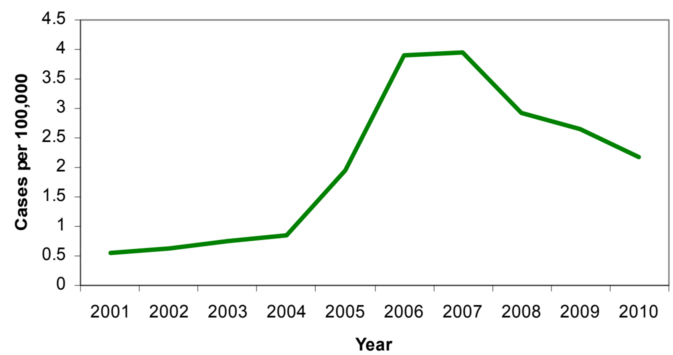
References

Walderhaug M, "Ciguatera," *Foodborne Pathogenic Microorganisms and Natural Toxins Handbook*, U.S. Food and Drug Administration, 1992, available at: http://www.cfsan.fda.gov/~mow/chap36.html.

Cryptosporidiosis

Cryptosporidiosis: Crude Data	
Number of Cases	408
2010 incidence rate per 100,000	2.2
% change from average 5 year (2005-2009) reported incidence rate	-29.2%
Age (yrs)	
Mean	45.8
Median	47
Min-Max	0 - 95

Figure 1. Cryptosporidiosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Cryptosporidiosis is a diarrheal disease caused by the organism *Cryptosporidium parvum*. A total of 408 cases of cryptosporidiosis were reported in 2010, of which 94.6% were classified as confirmed. Just over 7% of all reported cases were classified as outbreak-related, which is a decrease from 10% the previous year; 6.1% of cases were acquired outside the U.S. The incidence rate for cryptosporidiosis increased sharply from 2004 to 2006 (Figure 1), was stable through 2007, and since has fallen somewhat to a level well above that before 2005. Increases in cryptosporidiosis are commonly observed during the summer months when exposure to recreational water is more common. In 2010, the number of cases occurring each month during the summer was lower than the five-year average for July through October (Figure 2). The overall increase in cryptosporidiosis over the past decade is consistent with national trends, but whether the increase is due to increased reporting and diagnostic practices or an increase in disease burden is unclear. What is clear is that outbreak-related case reporting has influenced yearly rates although it does not explain the entire increase. The introduction of nitazoxanide in 2004, the first licensed treatment for the disease, may have influenced clinical practice because diagnostic testing for *Cryptosporidium* now can lead to specific treatment.

Figure 2. Cryptosporidiosis Cases by Month of Onset, Florida, 2010

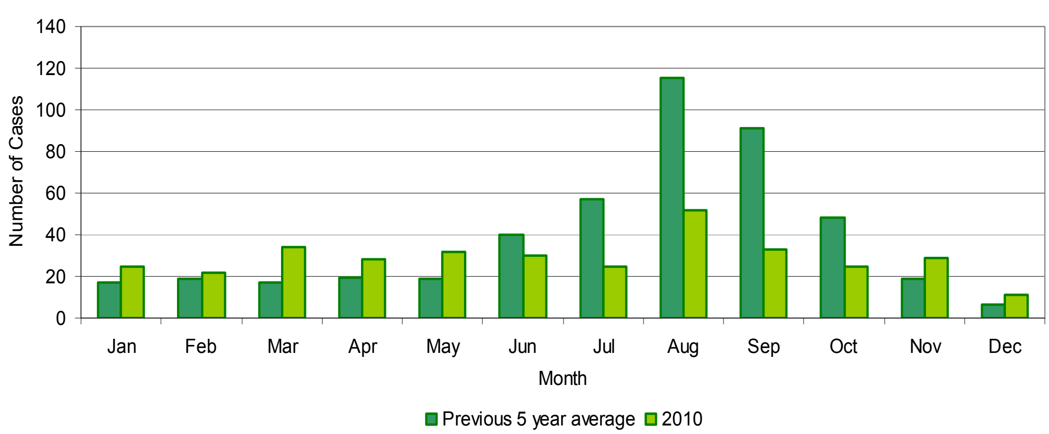
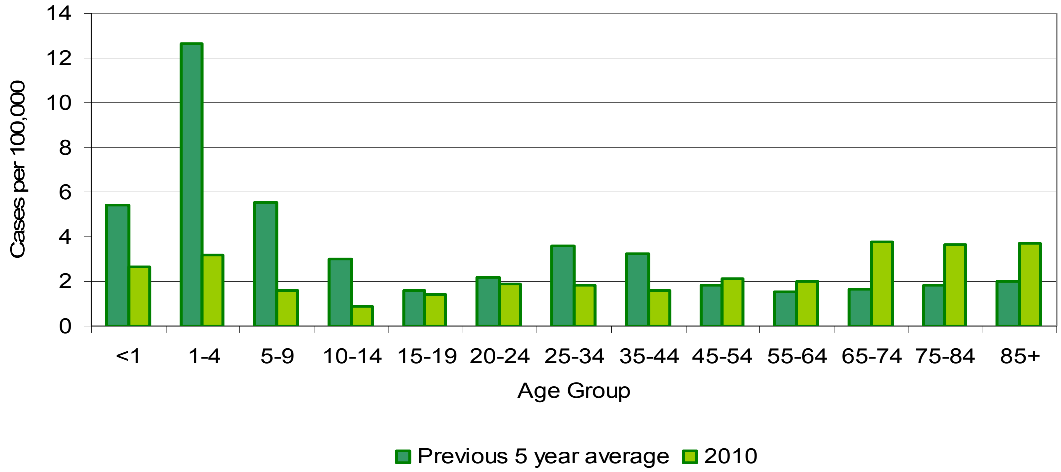


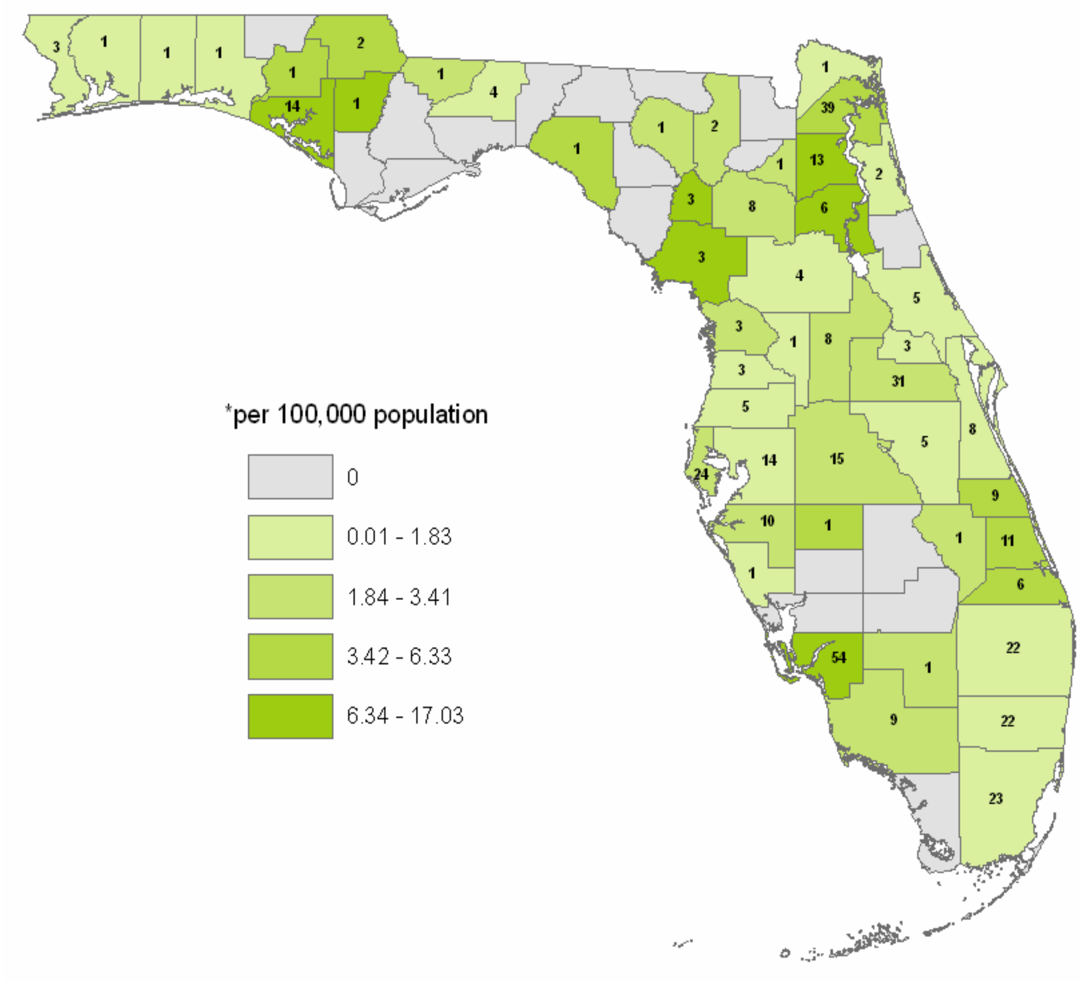
Figure 3. Cryptosporidiosis Incidence Rate by Age Group, Florida, 2010



Historical rates are higher among children aged <10 years, with the highest rates occurring in the one to four age group (3.19 per 100,000) (Figure 3). However, there has been an increase in incidence among those aged >65 years, almost doubling the previous five-year averages. In 2010, approximately 37% of reported cases were in children aged < five years who attended daycare centers. The smaller second peak in incidence among adults aged 20 to 44 years may be attributable to family contact with infected children (Figure 3).

Cases of cryptosporidiosis were reported in 49 of the 67 counties in Florida (Figure 4). Gilchrist County, with the highest incidence, reported no cases as outbreak-associated. Manatee County had a lower incidence rate, but 60.0% of their cases were associated with an outbreak in a foster home. Additional counties with a high proportion of outbreak-associated cases include Collier (22.2%) and Duval (20.5%).

Figure 4. Cryptosporidiosis Cases and Incidence Rates* by County, Florida 2010



Prevention

The likelihood of contracting cryptosporidiosis can be reduced by practicing good hand hygiene, such as washing hands before handling or eating food and after diaper changing. Water in recreational settings, such as swimming pools or water parks, should not be ingested or swallowed. Outbreaks associated with recreational water, especially water parks and interactive fountains, can be prevented if managers of those sites follow established guidelines for management of these facilities. Many of the guidelines are available through the Centers for Disease Control and Prevention's Health Swimming/Recreational Water Program at http://www.cdc.gov/healthywater/swimming/.

A swimmer's likelihood of contracting or spreading cryptosporidiosis in a recreational water setting can be reduced by practicing the following healthy swimming behaviors.

- Avoid swallowing pool water or even getting it in your mouth.
- Shower before swimming and wash your hands after using the toilet or changing diapers.
- When swimming, take children on bathroom breaks or check diapers often.
- Change diapers in a bathroom and not at poolside and thoroughly clean the diaper changing area.
- Protect others by not swimming if you are experiencing diarrhea (this is essential for children in diapers) and for at least two weeks after diarrhea stops.

References

Centers for Disease Control and Prevention, "Outbreak of Gastroenteritis Associated with an Interactive Water Fountain at a Beachside Park – Florida, 1999," *MMWR*, Vol. 49, No. 25, 2000, pp. 565-8.

Centers for Disease Control and Prevention, "Summary of Notifiable Diseases – United States, 2006," *MMWR*, Vol. 55, No. 53, 2006.

Centers for Disease Control and Prevention, "Surveillance for Waterborne Disease and Outbreaks Associated with Recreational Water Use and Other Aquatic Facility- Associated Health Events - United States, 2005-2006," *MMWR*, Vol. 57, No. SS-9, 2009.

Centers for Disease Control and Prevention, "Cryptosporidiosis Surveillance - United States, 2006-2008 and Giardiasis Surveillance - United States, 2006-2008," *MMWR*, Vol. 59, No. SS-6, 2010.

L.M. Fox, et al., "Nitazoxanide: A New Thiazolide Antiparasitic Agent," *Clinical Infectious Diseases*, Vol. 40, 2005, pp. 1173-80.

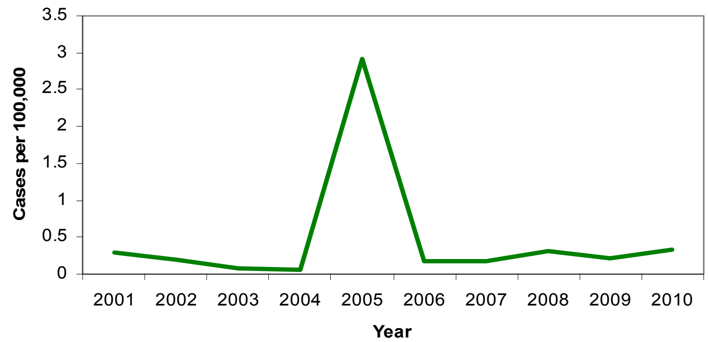
Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ncidod/dpd/parasites/cryptosporidiosis/factsht_cryptosporidiosis.htm.

Cyclosporiasis

Cyclosporiasis: Crude Data	
Number of Cases	63
2010 incidence rate per 100,000	0.3
% change from median 5 year (2005-2009) reported incidence rate	57.6%
Age (yrs)	
Mean	48.3
Median	48
Min-Max	1 - 86

Figure 1. Cyclosporiasis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Cyclosporiasis is a parasitic diarrheal disease caused by the organism *Cyclospora cayetanensis*. With the exception of a large outbreak of cyclosporiasis in 2005 (493 cases from Florida; see the notable outbreaks section of the *Florida Morbidity Statistics Report 1997-2006* for more details), the incidence rate for cyclosporiasis has remained stable in recent years (Figure 1). In comparison to the median incidence for the last five years, the incidence in 2010 increased by 57.6%, with a total of 63 cases reported compared to 40 cases in 2009. Only 9.5% of the cases reported in 2010 were considered outbreak-associated. In 2010, the number of cases by month of disease onset met or exceeded the previous five-year median during all months of the year when cases were reported, except for April, July, August, and November (Figure 2). Of the cases reported with onset dates in June, only four were listed as outbreak associated. Two were a household cluster with no identified risk factors. The other two were also household contacts who also had recent travel history to Mexico. All other cases were listed as sporadic, only 11% of those cases were listed as being acquired outside of the U.S. The peak in late spring and early summer may reflect the seasonal variation of endemic cyclosporiasis in countries that export fruits and vegetables to the U.S.

Figure 2. Cyclosporiasis Cases by Month of Onset, Florida, 2010

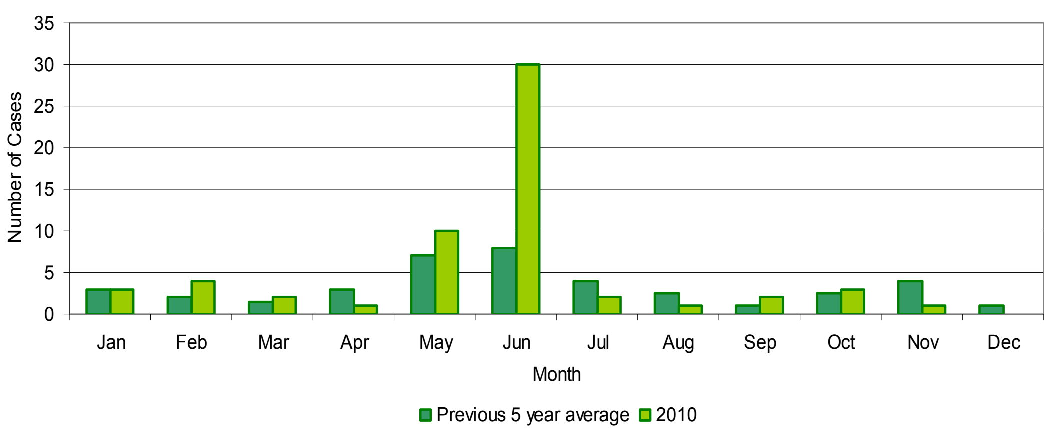
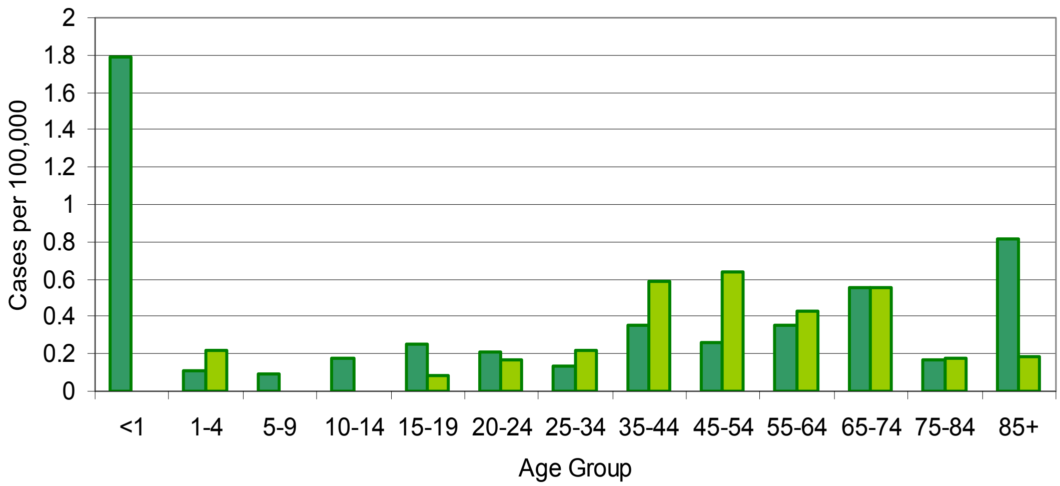
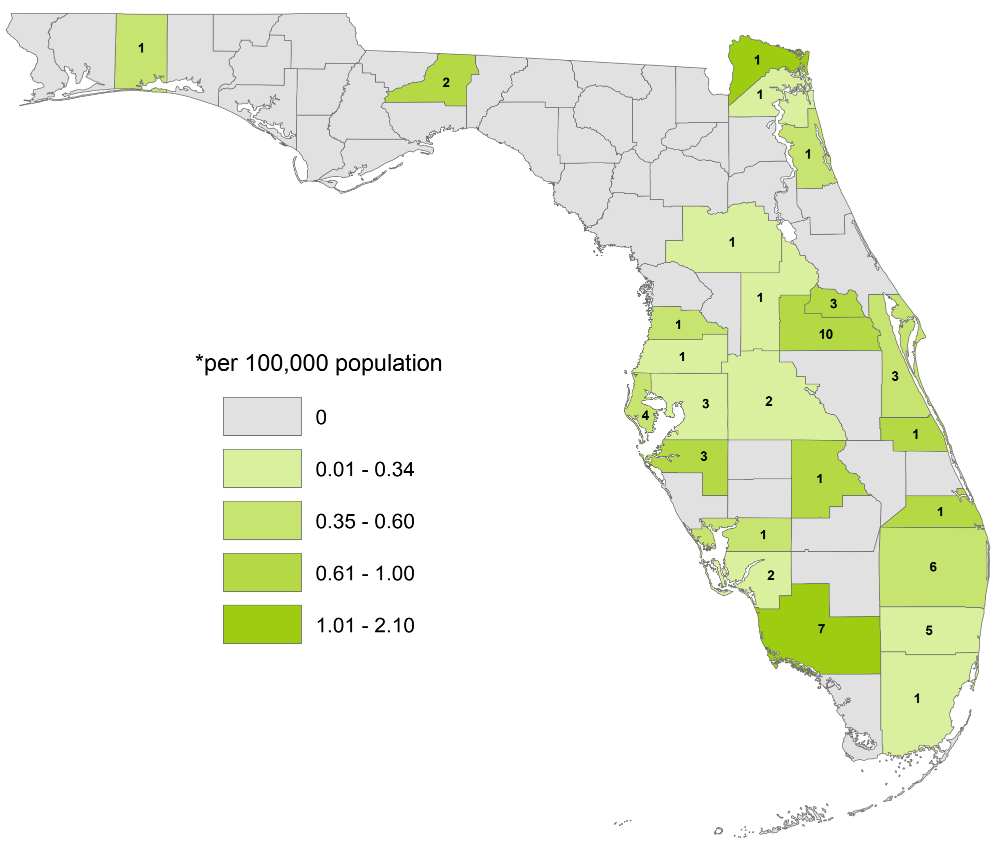


Figure 3. Cyclosporiasis Incidence Rate by Age Group, Florida, 2010



Cyclosporiasis was reported in 25 of the 67 counties in Florida (Figure 4), with the largest number of cases occurring in Orange County.

Figure 4. Cyclosporiasis Cases and Incidence Rates* by County, Florida, 2010



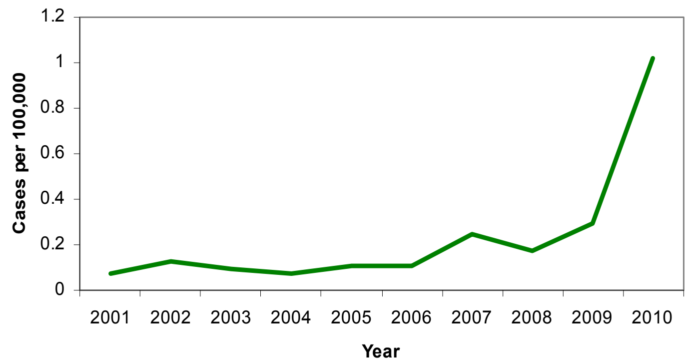
Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ncidod/dpd/parasites/cyclospora/default.htm.

Dengue

Dengue Fever: Crude Data	
Number of Cases	195
2010 incidence rate per 100,000	1.0
% change from average 5 year (2005-2009) reported incidence rate	451.1%
Age (yrs)	
Mean	46.8
Median	49
Min-Max	2 - 89

Figure 1. Dengue Fever Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Dengue virus (DENV) is now the most frequent cause of acute febrile illness among returning U.S. travelers from the Caribbean, South America, and Asia. It is also the most common mosquito-borne viral infection in the world. Since 1998, imported dengue cases have been reported in Florida each year. The number of cases reported typically ranged from 10 to 20 per year until 2007, when 46 cases were reported (Figure 1). After 2007, the case counts have remained elevated, with 33 cases reported in 2008, 55 in 2009, and 195 cases reported in 2010. Of those cases reported in 2010, three were categorized as dengue hemorrnagic fever, which is a more severe presentation of DENV infection. This increase is due in part to illness acquired in Florida (primarily Key West), and due to greater prevalence of dengue worldwide and epidemics in areas with high volume of travelers to the U.S., such as Puerto Rico. Increased activity is especially of concern because of the potential for introduction to Florida mosquitoes via infected symptomatic or asymptomatic travelers, which could lead to the virus' re-establishment in the state. Competent mosquito vectors are present in all parts of the state, though the *Aedes aegypti* species that predominates in the southernmost parts of the state is a more efficient vector than the *Aedes albopictus* species more common elsewhere. The establishment of endemic foci in Florida is hampered due in part to the high proportion of residents who have screens and air conditioning in their homes, schools, and workplaces.

Unfortunately, the potential for re-emergence was demonstrated in 2009 when an outbreak of dengue fever occurred in Key West, Monroe County. Illness was first identified in a New York resident who traveled to the area and became ill upon her return home. Once she was diagnosed with dengue fever and reported, a medical advisory was issued for Key West and active surveillance was implemented. Twenty-two cases meeting the confirmed or probable case definitions were identified; 21 were Florida residents and are included in Figure 1. Onset dates of these cases ranged from early July to mid-October 2009. More information about this outbreak can be found in the Summary of Notable Outbreaks and Case Investigations Section of the 2009 report. There were 64 additional cases with exposure in Monroe County in 2010.

Typically, disease onset for travelers returning to Florida peaks during mid-summer and fall, though cases are reported year-round (Figure 2). The unusual increase in August through October 2009 is primarily due to the Key West outbreak. There were a large number of cases with onset in January 2010 as well as in 2009, which may have been due to holiday travel.

Figure 2. Dengue Fever Cases by Month of Onset, Florida, 2010

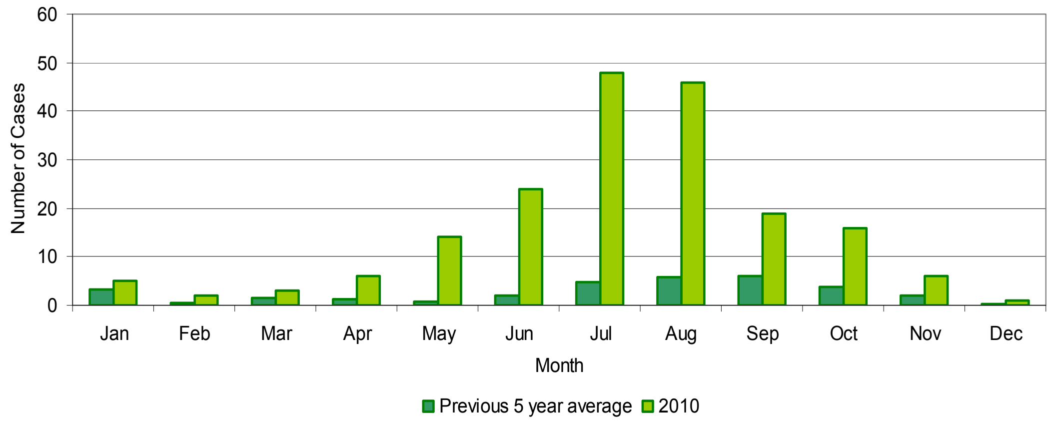
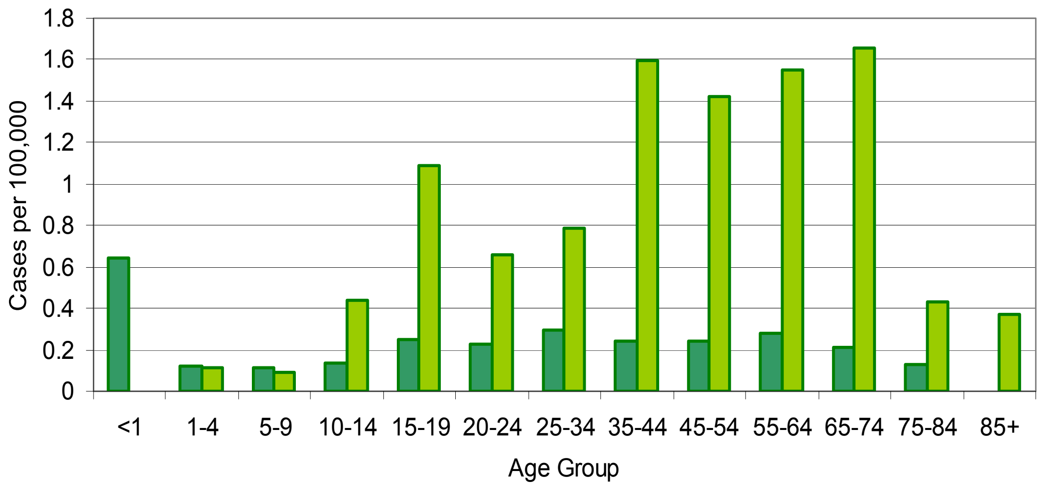


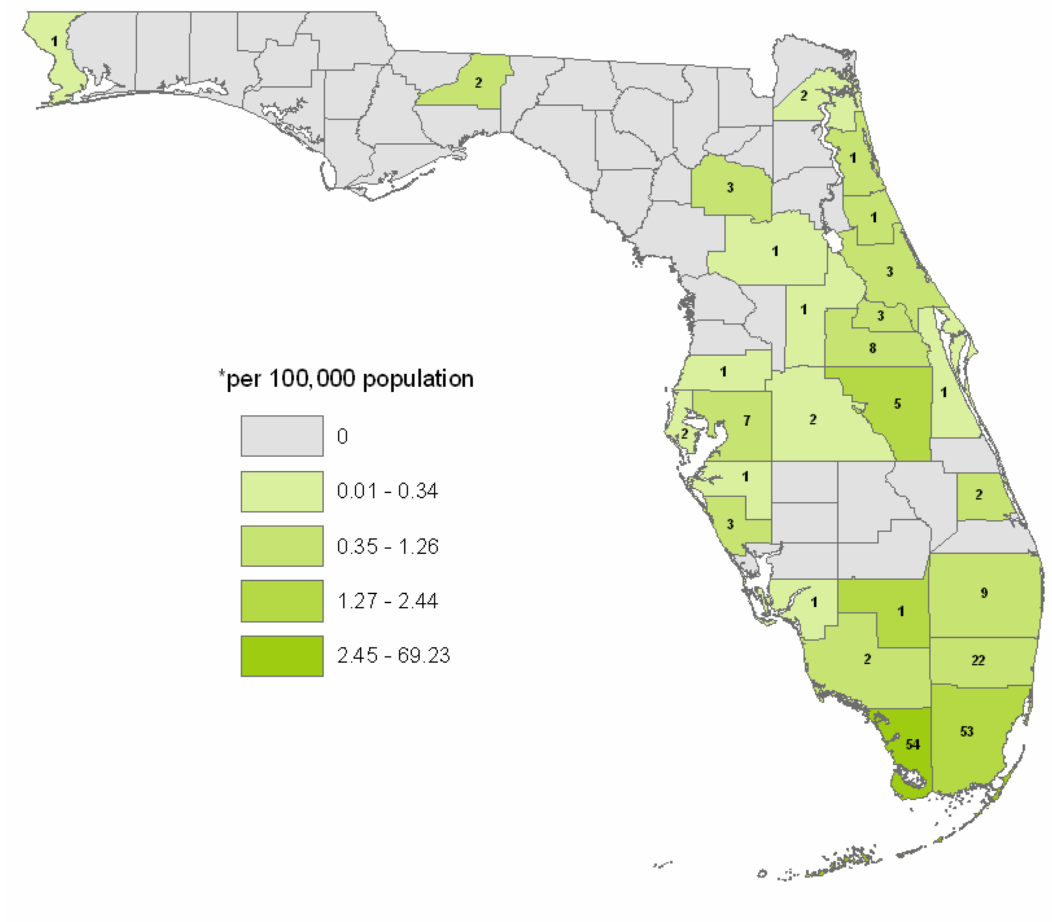
Figure 3. Dengue Fever Incidence Rate by Age Group, Florida, 2010



In 2010, 66 cases of locally-acquired dengue were reported as acquired in Broward (1), Miami-Dade (1) and Monroe (64) counties. There were two additional cases that had illness onset in 2010 but were not reported until 2011, both of which were acquired in Monroe County bringing the total number of cases acquired there to 66 in 2010. Of the cases acquired in Monroe County in 2010 (66), there were 55 Key West residents, one from Monroe County (not a Key West resident), eight cases were residents of other Florida counties, and two were from other states (and were reported by their respective states). Onset dates ranged from March 17 to November 30, 2010. The mean age of reported dengue cases acquired in Florida is 53 years (range: 22-86). Ninety-two percent of cases were white and 61% were male.

In 2010, 131 cases of imported dengue were reported. Of those, two had onset dates in 2009. In addition to the 131 imported dengue cases for 2010, five cases had onset dates in 2010 but were not reported until 2011. Therefore, the total number of cases reported as being imported with onset dates in 2010 was 134 cases. Travel history in the two weeks prior to onset for those cases indicated as imported include: Puerto Rico 27%, other Caribbean countries 27%, Central America 21%, South America 20%, and Asian and African countries 5% combined. Most cases (54%) occurred in people aged 35 to 64 years. The mean age of reported imported dengue cases in Florida was 44 years (range: 3-89). Seventy-five percent of cases were white and 53% were male.

Dengue Fever Cases and Incidence Rates* by County, Florida 2010



Prevention

There is currently no vaccine available against DENV infection. Travelers to dengue-endemic countries should be warned of the risk of disease and instructed to avoid mosquito bites. People should take the following precautions to protect themselves from mosquitoes.

DRAIN standing water to stop mosquitoes from multiplying:

- Drain water from garbage cans, house gutters, buckets, pool covers, coolers, toys, flower pots or any other containers where sprinkler or rain water has collected.
- Discard old tires, drums, bottles, cans, pots and pans, broken appliances and other items that aren't being used.
- Empty and clean birdbaths and pet's water bowls at least once or twice a week.
- Protect boats and vehicles from rain with tarps that don't accumulate water.
- Maintain swimming pools in good condition and appropriately chlorinated. Empty plastic swimming pools when not in use.

COVER skin with clothing or repellent:

- CLOTHING - Wear shoes, socks, and long pants and long-sleeves. This type of protection may be necessary for people who must work in areas where mosquitoes are present.
- REPELLENT - Apply mosquito repellent to bare skin and clothing.
    - Always use repellents according to the label. Repellents with DEET, picaridin, oil of lemon eucalyptus, and IR3535 are effective.
    - Use mosquito netting to protect children younger than 2 months old.

COVER doors and windows with screens to keep mosquitoes out of your house:

- Repair broken screening on windows, doors, porches, and patios.

References

Gill J, Stark LM, Clark GG, “Dengue Surveillance in Florida, 1997-1998,” *Emerg Infect Dis*., 2000; 1:30-5.

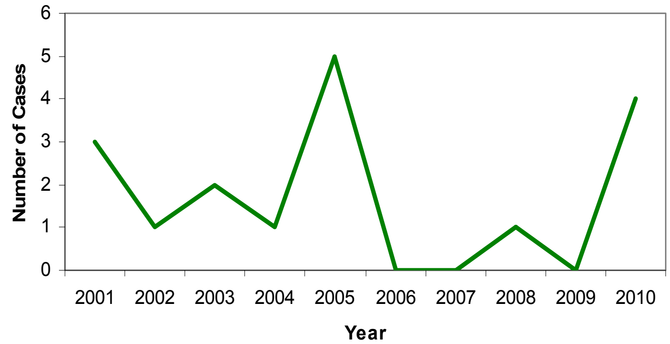
Additional Resources

Additional information on DENV and other mosquito-borne diseases can be found in the *Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook*, online at: http://www.doh.state.fl.us/environment/medicine/arboviral/pdf_files/2009MosquitoGuide.pdf.

Disease information is also available from the Centers for Disease Control and Prevention (CDC) website at: http://wwwn.cdc.gov/travel/yellowBookCh4-DengueFever.aspx.

Eastern Equine Encephalitis

Figure 1. Eastern Equine Encephalitis Cases by Year Reported, Florida, 2001-2010



Disease Abstract

Eastern equine encephalitis virus (EEEV) is a mosquito-borne alphavirus that was first identified in the 1930s. EEEV occurs in natural cycles involving birds and *Culiseta melanura* mosquitoes in freshwater swampy areas. Peak activity occurs between May and August, but transmission can occur year-round. In the usual cycle of transmission (enzootic cycle), EEEV remains in the swampy areas, as the mosquito involved prefers to feed upon birds and does not usually bite humans or other mammals. Most human cases are thought to occur when the virus occasionally moves into other mosquito species that are more likely to bite people and act as bridge vectors. Horses are more likely to live in swampy environments than humans; therefore, infections in unvaccinated horses can sometimes be used as indicators for focal EEEV activity.

All evidence indicates that human eastern equine encephalitis (EEE) does not have epidemic potential in Florida, but it can cause severe disease in those infected. Continuous surveillance since 1957 has documented 82 human cases (average 1.5 cases per year, range: 0-5), including four in 2010.

In 2010, EEEV antibodies were also detected in a fatality deemed to be due to other unrelated causes and in an elderly patient with no previously reported encephalitic illness. In the past, EEEV antibodies have only been detected in two other asymptomatic Florida residents, one of which reportedly had survived a previous EEE infection (history not available for the other individual). The cases reported each year from 1999 to 2010 suggest that EEE remains infrequent (Figure 1).

In 2010, one case was reported in June and three in July. The majority of EEE cases involve those aged <15 years. However, in 2010, one case involved a one year old child and the other three cases were aged 50-58 years. Of the 17 cases reported between 2001 and 2010, eight (47%) resulted in death. All four cases in 2010 were fatal. This is a higher mortality rate than the rate typically reported in the U.S. (33%). Two cases were female and two male. Three of the cases were white and one was black; all were non-Hispanic. All four cases reportedly either did not use or rarely used mosquito repellants and two regularly smoked outside. Two of the adults also had underlying disease conditions. Between 2001 and 2010, 10 cases (59%) were reported in individuals residing in counties in the panhandle or northern region of the state, and six cases (35%) were reported from the central region. In 2010, there were two cases from Hillsborough County and one each in Wakulla and Leon counties.

Prevention

Prevention of the disease is a necessity, as there is no cure for EEE; only supportive care is available. Measures should be taken to avoid being bitten by mosquitoes including: using EPA-approved insect repellents that contain DEET, Picaridin, or oil of lemon eucalyptus; avoiding spending time outdoors during dusk and dawn or other times when disease-carrying mosquitoes are active; and covering skin with long sleeves and long pants to protect skin from mosquito bites. In addition, screens on doors and windows should be well maintained to ensure mosquitoes cannot enter the home. Draining areas of standing water from around the home to eliminate mosquito breeding sites is also recommended. Horses are quite susceptible to this virus and vaccination is strongly recommended.

Additional Resources

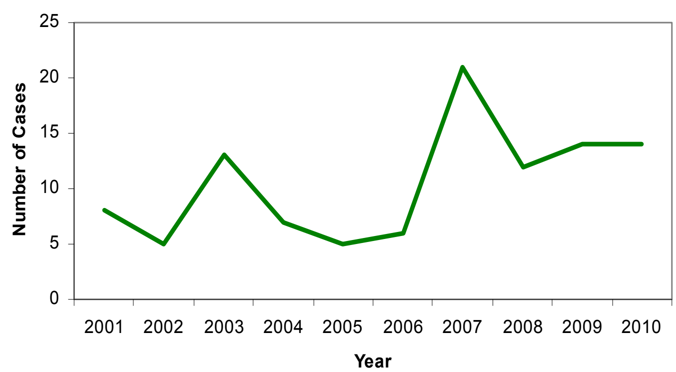
Additional information on EEE and other mosquito-borne diseases can be found in the Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook, online at: http://www.doh.state.fl.us/environment/medicine/arboviral/pdfs/2011/MosquitoGuide_2011.pdf.

Disease information is also available from the Centers for Disease Control and Prevention (CDC) website at: http://www.cdc.gov/ncidod/dvbid/arbor/eeefact.htm.

Ehrlichiosis/Anaplasmosis

Ehrlichiosis: Crude Data	
Number of Cases	14
2010 incidence rate per 100,000	0.07
% change from average 5 year (2005-2009) reported cases	20.7%
Age (yrs)	
Mean	51.9
Median	52.5
Min-Max	26 - 79

Figure 1. Ehrlichiosis Cases by Year Reported, Florida, 2001-2010

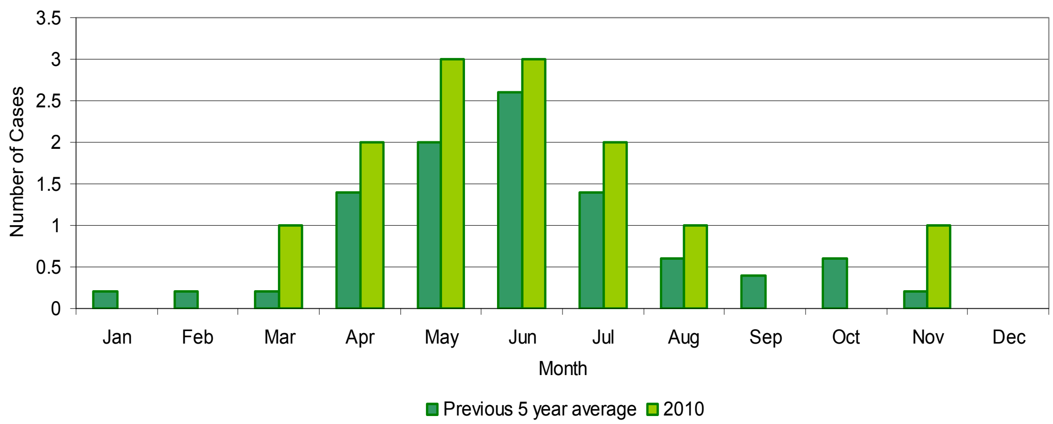


Disease Abstract

Ehrlichia chaffeensis, discovered in 1987, causes human monocytic ehrlichiosis (HME). *Ehrlichia ewingii* has been documented in Florida and is indistinguishable from *E. chaffeensis* using serologic testing; therefore, some cases classified as HME may actually be due to *E. ewingii*. The principal vector for both agents is the Lone Star tick, *Amblyomma americanum*. Due to testing limitations, *E. ewingii* is not as well characterized as *E. chaffeensis*; however, it has most frequently been identified in immunocompromised patients. *Ehrlichia* cases are reported most frequently in the Midwestern and middle-Atlantic states. Human granulocytic ehrlichiosis (HGE) was originally thought to be caused by another species of *Ehrlichia*, but was later reclassified as *Anaplasma phagocytophilum,* with the associated illness renamed human granulocytic anaplasmosis (HGA). The principal vector for *A. phagocytophilum* is *Ixodes scapularis* and most cases are reported from the Northeast and Midwestern U.S. HGA became nationally notifiable in 1999.

Between 1998 and 2009, the total number of combined cases of HME and HGA reported annually ranged from two to thirteen cases, except in 2007 when 21 cases were reported (18 HME and three HGA) (Figure 1). In 2010, ten cases of HME, three cases of HGA, and one case due to an undetermined species were reported. White-tailed deer is an important reservoir species for *E. chaffeensis.* Less is known regarding other potential wildlife reservoirs. In addition, there is no standardized tick disease surveillance program in Florida. These gaps in knowledge make it difficult to ascertain why case numbers might fluctuate from year to year. Since HGA was recognized as a separate reportable disease in 1999, there have been consistently more cases of HME than HGA reported in Florida. In 2010, HME cases were 50% male and 50% female, 67% of HGA cases were female, and the single undetermined case was reported as male. The average age of HGA cases was 36 years, which is younger than historic trends. The average age of HME cases was 56 years with a median age of 59, which was slightly older than historic trends. One HME case in a man aged 36 years was fatal. Nine cases (90%) of HME were non-Hispanic whites; the remaining case was of Hispanic ethnicity. Two of the HGA cases were white with one being Hispanic and the other non-Hispanic ethnicity; the race and ethnicity of the third case were unknown. The case due to an undetermined species was white and non-Hispanic. Eighty percent of HME cases were reported as being acquired in Florida, and 20% were acquired in other states in the U.S. Most cases were reported in the north and central parts of the state; three of 10 HME cases were reported from Alachua County. HGA is more likely to be acquired outside Florida; however, all three cases reported in 2010 were acquired in Florida. Though cases of both HME and HGA are reported year-round, peak transmission occurs during the late spring and early summer months (Figure 2).

Figure 2. Ehrlichiosis Cases by Month of Onset, Florida, 2010

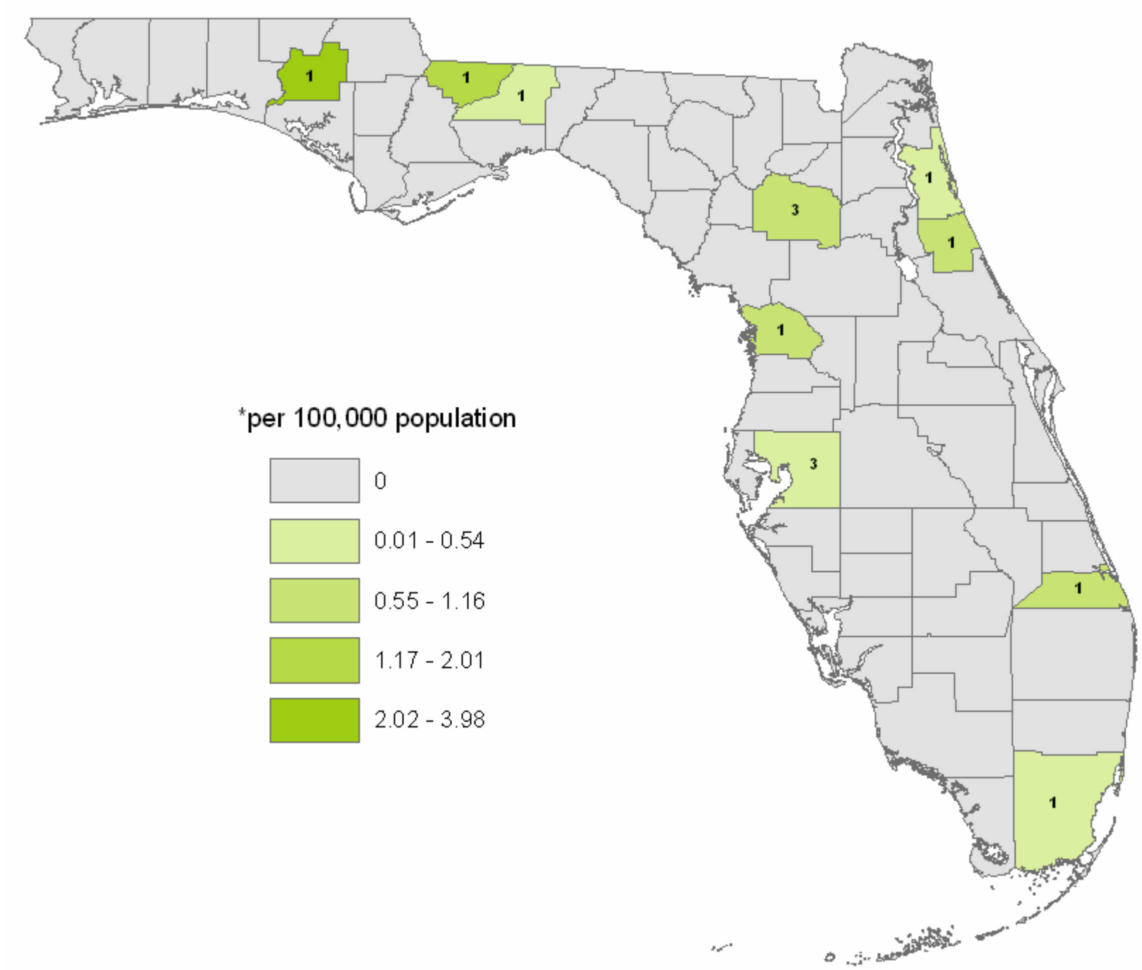


Prevention

Both HME and HGA can be treated with doxycycline, though prevention of tick bites is the best way to avoid disease. Prevention measures include the following strategies.

- Wear light-colored clothing so that ticks crawling on clothing are visible.
- Tuck pants legs into socks so that ticks cannot crawl inside clothing.
- Apply repellent to discourage tick attachment. Repellents containing permethrin can be sprayed on boots and clothing, and will last for several days. Repellents containing DEET can be applied to the skin, but will last only a few hours before reapplication is necessary.
- Search the body for ticks frequently when spending time in potentially tick-infested areas. If a tick is found, it should be removed as soon as possible.
- Control tick populations in the yard and on pets to reduce the risk of disease transmission.

Ehrlichiosis/Anaplasmosis Cases and Incidence Rates* by County, Florida 2010



References

Center of Disease Control and Prevention, "Diagnosis and Management of Tickborne Rickettsial Diseases: Rocky Mountain Spotted Fever, Ehrlichiosis, and Anaplasmosis-United States," *MMWR*. 2006; 55 (RR04); 1-27.

Additional Resources

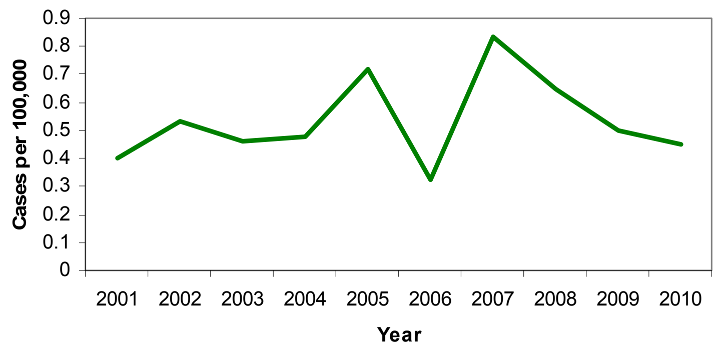
Disease information is also available from the Florida Department of Health at:
http://www.doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_Index.htm.

Disease information is available from the CDC at: http://www.cdc.gov/ncidod/dvrd/ehrlichia/Index.htm.

Escherichia coli, Shiga Toxin-Producing

Escherichia coli, Shiga Toxin-Producing: Crude Data	
Number of Cases	85
2010 incidence rate per 100,000	0.5
% change from average 5 year (2005-2009) reported incidence rate	-25.3%
Age (yrs)	
Mean	23.3
Median	15
Min-Max	0 - 86

Figure 1. *Escherichia coli* , Shiga Toxin-Producing Incidence Rate by Year Reported, Florida, 2001-2010



Description

The most commonly identified serogroup of Shiga toxin-producing *Escherichia coli* (STEC) in the U.S. is O157:H7; however, many other serogroups can cause disease due to STEC. Serogroups O26, O111, and O103 are the non-O157 serogroups that most often cause illness in people in the U.S. Overall, the non-O157 serogroups are less likely than *E. coli* O157:H7 to cause severe illness; however, some non-O157 STEC serogroups can cause the most severe manifestations of illness.

Prior to 2008, STEC was reported under multiple disease codes, depending on the serogroup. One reporting code captured only serogroup O157:H7. Another reporting code captured known serogroups other than O157:H7. Previous Florida Morbidity Statistics Reports included only the disease code for *E. coli* O157:H7. However, in 2008, these reporting codes were combined into one and *E. coli* O157:H7 is no longer separated from the non-O157 strains.

The figures in this report reflect cases due to infections with all STEC serogroups reported over the past 10 years, not just serogroup O157:H7; therefore, they cannot be compared to E. coli O157:H7 numbers in reports prior to 2008.

Disease Abstract

A total of 85 confirmed and probable cases were reported in 2010, of which 72 (84.71%) were confirmed. An additional 154 suspected cases were reported in 2010, but are not included in this summary. Of those 154 suspected cases, 57 (37.01%) were pending final Centers for Disease Control and Prevention (CDC) results when the 2010 disease reporting database closed. Though these cases could not be counted as confirmed, it is likely that some portion of them will later be laboratory confirmed. In 2009, only one case was pending final CDC result when the database closed.

Twenty-one cases (24.71%) were classified as outbreak-associated. Three cases were acquired in states other than Florida and 10 were acquired outside the U.S. Approximately one-third (24) of the confirmed cases were caused by serogroup O157:H7, three were caused by O157:H unknown, and one was caused by O157:non-motile. Non-O157 serogroups included O103:H2 (11), O26:H11 (5), O111:H8 (4), O rough:non-motile (2), O undetermined:H8 (2), O111:NM (2), O145:NM (2), O153:H2 (2), O rough:H11 (1), O undetermined:H14 (1), O undetermined:H16 (1), O undetermined:H27 (1), O103:H25 (1), O115:H10 (1), O128:H2 (1), O174:H21 (1), O45:H2 (1), O6:H34 (1), O69:H11 (1), O76:NM (1), O91:H14 (1), and one unknown strain.

Figure 2. *Escherichia coli,* Shiga Toxin-Producing Cases by Month of Onset, Florida, 2010

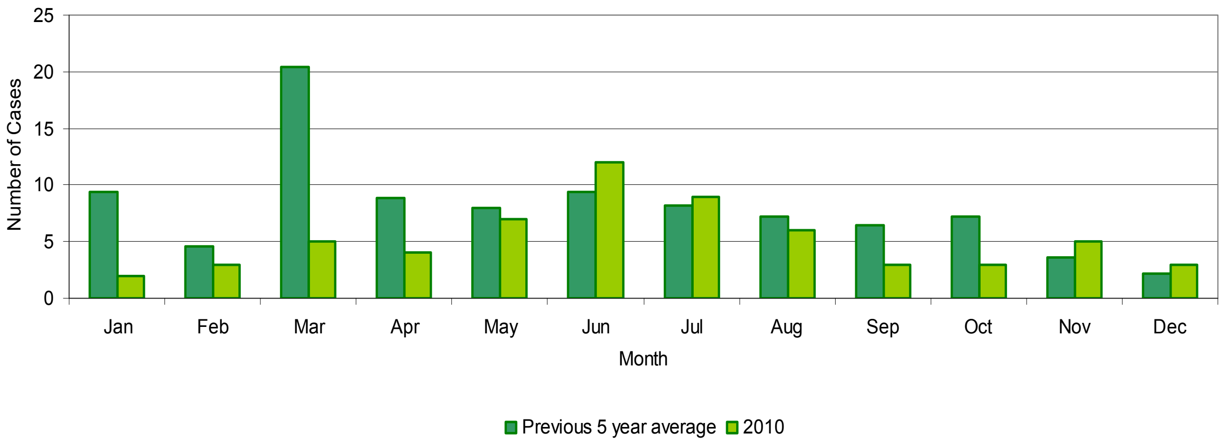
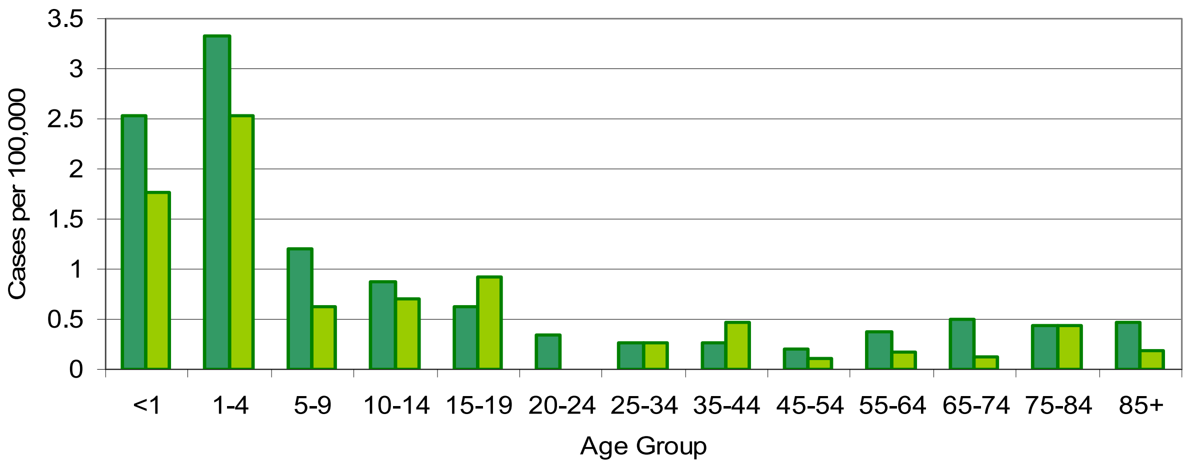


Figure 3. *Escherichia coli,* Shiga Toxin-Producing Incidence Rate by Age Group, Florida, 2010

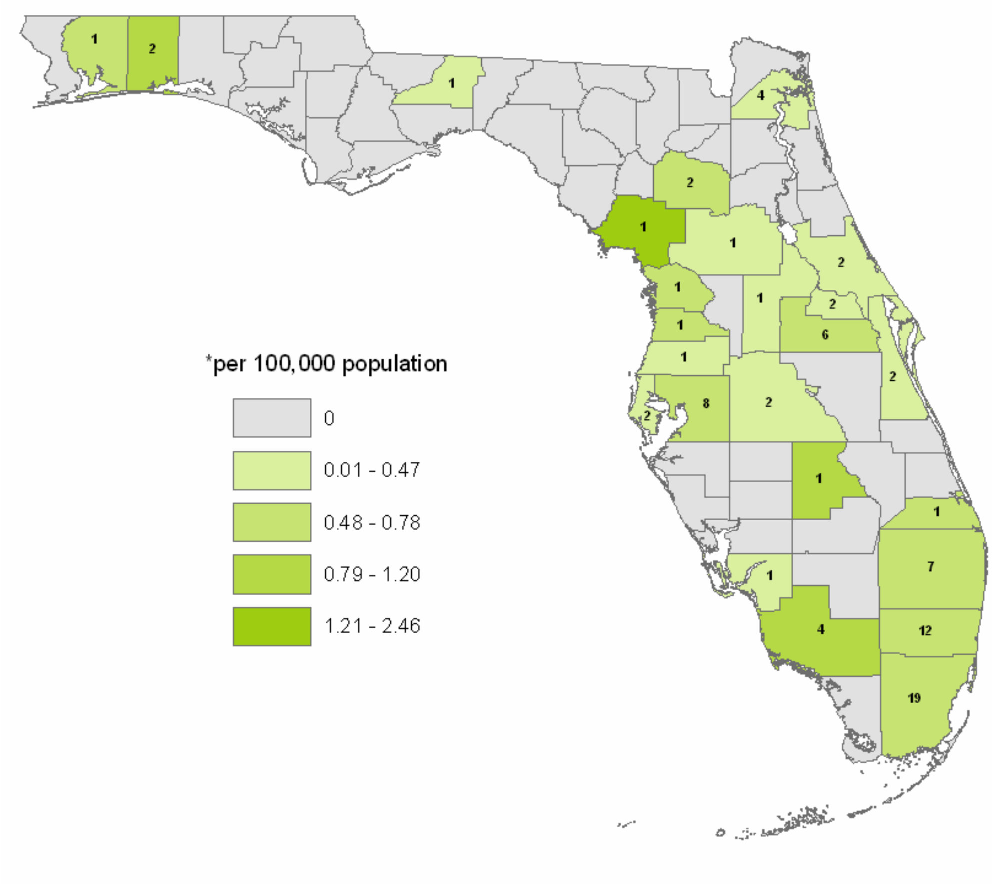


The incidence rate for STEC has varied over the last ten years (Figure 1). One source of variation is large outbreaks involving food products distributed across multiple states or other common source exposures such as petting zoos. In 2010, there was a 25.3% decrease in incidence of new cases in comparison to the average incidence from 2005 to 2009.

In 2010, the number of cases reported was highest in the early summer months (Figure 2). Incidence was greatest among children and teenagers (Figure 3). Incidence was at or below the previous five-year average in all age groups except those aged 15 to 19 years and those aged 35-44 years (Figure 3).

STEC cases were reported in 25 of 67 counties in Florida (Figure 4).

Figure 4. *Escherichia coli* Shiga Toxin-Producing Cases and Incidence Rates* by County, Florida, 2010



Prevention

To reduce the likelihood of becoming infected with STEC, observe the following guidelines:

- Cook all meat products thoroughly, particularly ground beef.
- Avoid cross-contamination by ensuring utensils, counter tops, cutting boards, and sponges are cleaned, or do not come in contact with raw meat.
- Do not allow the fluids from raw meat to come in contact with other foods.
- Wash your hands thoroughly before, during, and after food preparation and after toilet use.
- Wash your hands after coming into contact with any animals or their environment. Take special precautions with young children in petting zoos or with farm animals, as these settings may harbor the organism.

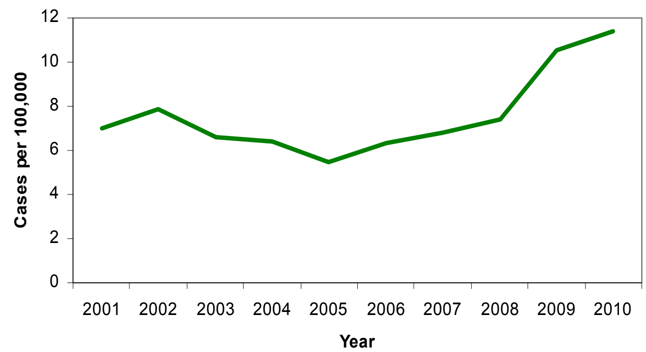
Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ecoli/.

Giardiasis

Giardiasis: Crude Data	
Number of Cases	2,139
2010 incidence rate per 100,000	11.4
% change from average 5 year (2005-2009) reported incidence rate	56.0%
Age (yrs)	
Mean	25.2
Median	17
Min-Max	0 - 95

Figure 1. Giardiasis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The incidence rate for giardiasis declined by about half over the years from 1999 to 2005 but increased slightly starting in 2006 (Figure 1). In 2010, there was a 56.01% increase in comparison to the five-year average incidence from 2005 to 2009, at least partly due to a case definition change (see below). A total of 2,139 cases were reported in 2010, higher than the number reported in 2009 (1,981 cases). Of the 2,139 cases reported in 2010, 98.8% were classified as confirmed. Each year, the number of cases increase in the summer and early fall months (Figure 2). The month of August historically has the largest number of reported cases; in 2010, the largest number of cases (144) in fact occurred in August. In 2010, all months except January exceeded the previous five-year average number of cases. Among the 2,139 giardiasis cases reported in 2010, 106, or 5.0%, were reported as outbreak-associated. Over 60.6% of all reported cases indicated infection had been acquired in Florida. There were 776 cases that were reported as acquired outside of the U.S., with 548 of these cases, or 70.6%, indicating infection was acquired in Cuba. The giardiasis case definition was changed in August 2008 to include asymptomatic laboratory-confirmed infection. Previously, only symptomatic laboratory-confirmed cases met the case definition. It is likely the large increase in reported cases of giardiasis in 2009 and again in 2010 was due to the change in case definition. In particular, there are certain populations, such as refugee populations, that are regularly screened for giardiasis, in whom asymptomatic cases are identified. In 2009, 43.0% of cases were reported without an onset date and that proportion rose to 47.5% in 2010. Note: In 2011, the giardiasis case definition was changed again, to require symptoms as well as clinical illness, and the number of reported cases is expected to decline as a result.

Figure 2. Giardiasis Cases by Month of Onset, Florida, 2010

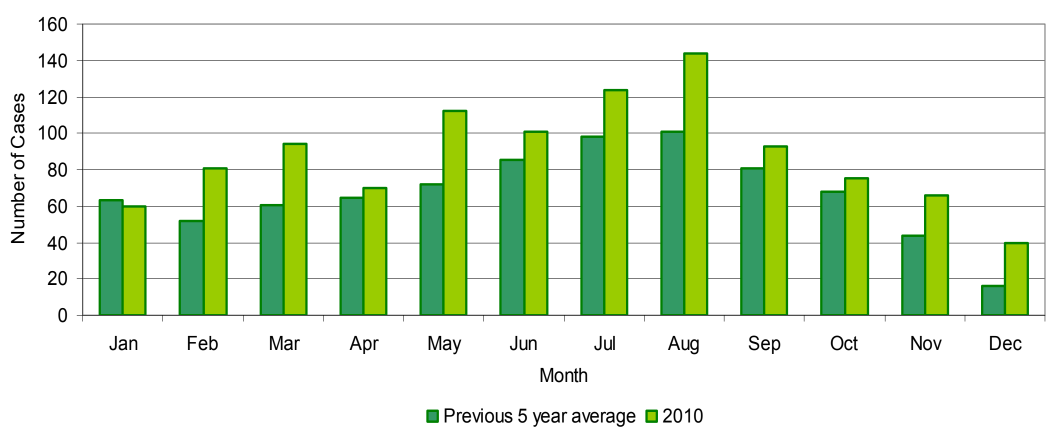
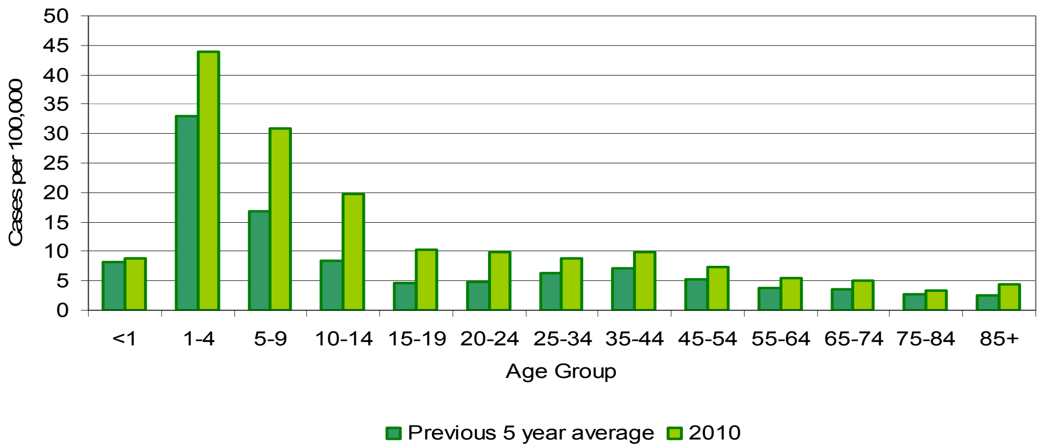


Figure 3. Giardiasis Incidence Rate by Age Group, Florida, 2010

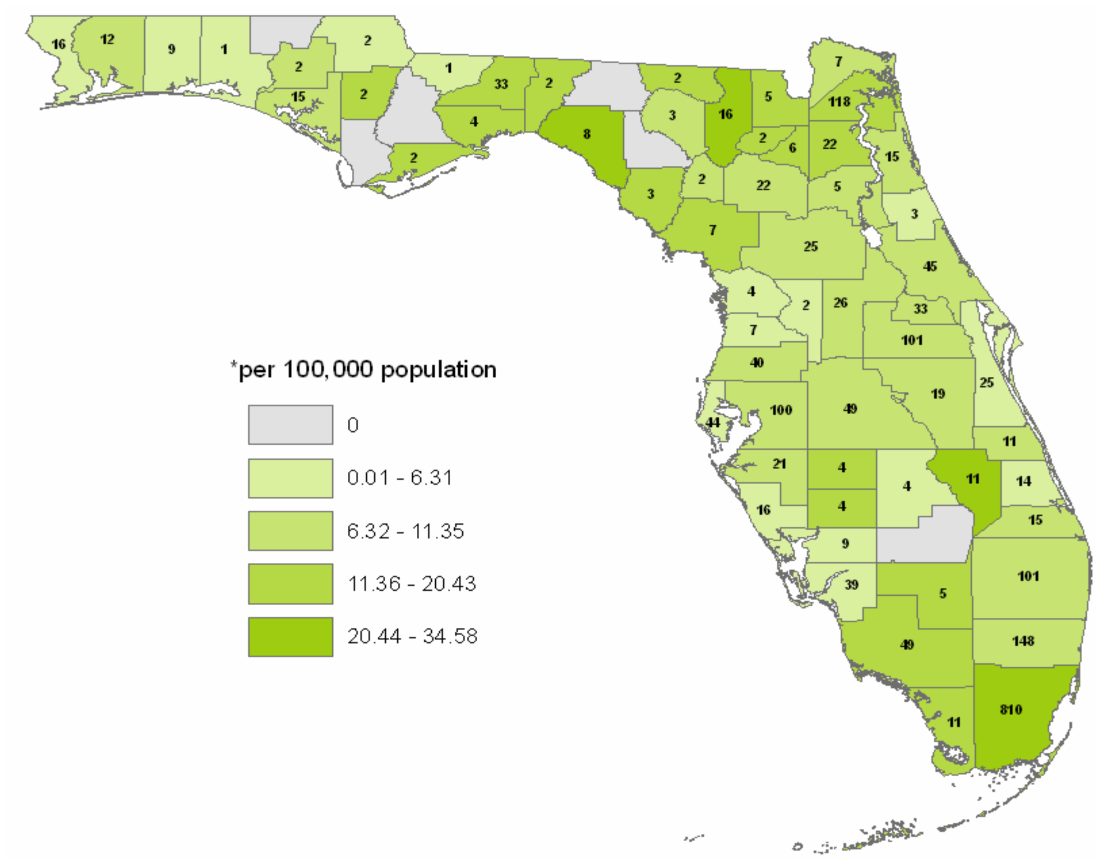


The highest reported incidence rates continue to occur in children aged one to four years (44.0 cases per 100,000) and five to nine years (31.0 cases per 100,000) (Figure 3). There were 421 cases reported among children aged one to four years. Approximately 20.7 percent of the 421 cases aged one to four years attended daycare.

Overall, males continue to have a higher reported incidence than females (13.1 and 9.6 per 100,000, respectively). Following previous annual trends, incidence rates in whites are greater than those in non-whites.

In 2010, giardiasis was reported in 61 counties in Florida (Figure 4).

Figure 4. Giardiasis Cases and Incidence Rate* by County, Florida, 2010



Prevention

Most *Giaridia* infections can be avoided or reduced by practicing good hand hygiene. This is particularly important in childcare centers and after toilet use, before handling food, and before eating. Additional cases can be avoided when children with diarrhea are kept home from child care centers. Other ways to prevent *Giaridia* include the following strategies:

- Avoid eating food and swallowing water from recreational water sources (such as ponds and lakes) that might be contaminated.
- Avoid drinking untreated water from shallow wells, lakes, rivers, springs, ponds, streams, or untreated ice.
- Avoid drinking tap water when traveling in countries where the water may not be adequately filtered and treated.
- Boil water of unsafe or uncertain origin for the most reliable way to make water safe for drinking.
- Use filters and chemical disinfection (including chlorination) for surface water supplies, but the effectiveness of chlorine is dependent on several factors, including pH, temperature, and organic content of the water.
- Avoid use of recreational water venues for two weeks after symptoms resolve if you have had *Giardia*-associated diarrhea.

References

L.K. Pickering, C.J. Baker, S.S. Long, and J.A. McMillan (eds.), *Red Book: 2009 Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics Press, 2009.

Additional Resources

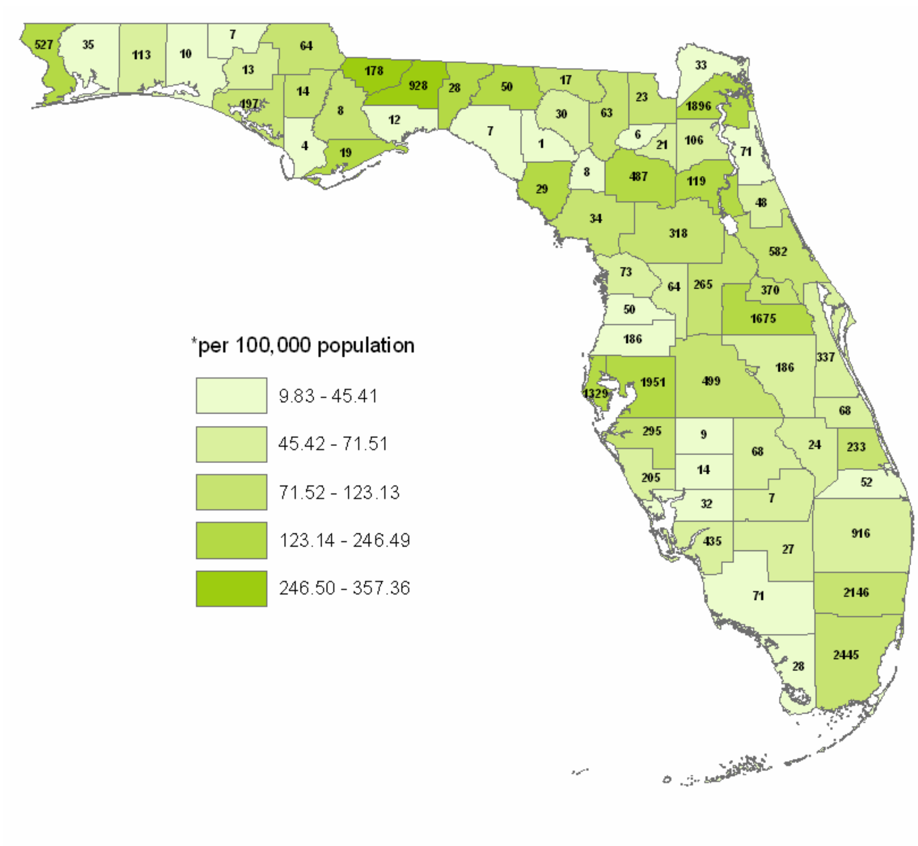
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ncidod/dpd/parasites/giardiasis/default.htm.

Gonorrhea

Disease Abstract

The number of cases and rate of gonorrhea have steadily declined nationally and within the state of Florida in the past five years. Nationally, the rate decreased from 119.7 to 99.1 (per 100,000 population) from 2006-2009. From 2008 to 2009, there was a dramatic decline (11.2%) in gonorrhea cases in Florida and an additional decrease of 3.5% from 2009 to 2010. However, even with these decreases in disease incidence, 20,164 cases of gonorrhea were reported in Florida for a rate of 106.0 cases per 100,000 population, which is more than five times higher than the Healthy People 2010 goal of 19.0 per 100,000 population. Two congenital cases were reported in 2010.

Figure 1. Gonorrhea Cases and Rate* By County, Florida, 2010



Gonorrhea remains the second most commonly reported sexually transmitted disease (STD) in Florida. Ten counties reported over 1,000 cases, yet 16 counties reported less than 20 cases of gonorrhea (Figure 1). Several smaller, less populated areas of the state have very high rates per 100,000 each year (Table 1). Gadsden County has consistently ranked number one in the rate of cases per 100,000 population. Half of all gonorrhea cases were reported from the larger, more populous counties of Miami-Dade (2,445), Broward (2,146), Hillsborough (1,951), Duval (1,896), Orange (1,675), and Pinellas (1,329).

Table 1. Counties With The Highest Rate of Gonorrhea per 100,000 Population, Florida, 2010

County	Rank	Population	Cases	Rate/100,000
Gadsden	1	52,040	178	581.4
Leon	2	275,862	928	355.2
Madison	3	20,353	50	248.5
Duval	4	919,645	1,895	233.1
Alachua	5	256,349	487	215.2

Among reportable infections, gonorrhea remains the second most prevalent sexually transmitted bacterial infection in 15-24 year olds in Florida. The age-specific case rate for 15-24 year olds in 2010 (528.3 per 100,000) was slightly lower than the rate in 2009 (535.5 per 100,000). However, this rate was three times higher than the second highest age-adjusted rate, which was in 25-34 year olds. Females infected with gonorrhea, on average, were younger than males, 22.5 years old and 26.9 years old respectively. The disease distribution reveals that an additional 16% of all reported cases of gonorrhea are reported in populations between the ages of 25-29; whereas those under 25 account for 64% of reported infection. More cases of gonorrhea have been reported in the 20-24 age group consistently since 1998, when compared to other five-year age groups.

Trends indicate gender differences in prevalence are less apparent than for other sexually transmitted diseases. Males and females each account for about half of cases reported (49.3% and 50.7%, respectively). Reported cases of gonorrhea in females decreased by 17.5% from 2006 to 2010. Female cases of gonorrhea decreased by 5% from 2009 to 2010. Among females, the highest rate (634.6 per 100,000) and number of cases (3,716) was reported in persons aged 15-19 years. The second highest rate was among females aged 20-24 years (621.3 per 100,000). Approximately 6% of infected women were pregnant at the time of the disease diagnosis.

The highest number of male cases was reported in the 20-24 years age group, 3,332 cases, for a rate of 537.4 cases per 100,000 population. The 2009 data showed an almost identical rate of 536.6 cases per 100,000 population. The overall number of cases and rate per 100,000 for males increased in 2010. Young men aged 15-19 years had the second highest rate (325.7) among their gender.

Non-Hispanic blacks account for approximately two thirds of reported gonorrhea cases in Florida. The rate was 389.4 per 100,000 population for non-Hispanic blacks compared to 30.7 per 100,000 for non-Hispanic whites. In 2010, non-Hispanic blacks aged 15-24 years had a case rate of 1,887.1 per 100,000. This rate was 13 times higher than the second highest rate, which was in non-Hispanic whites aged 15-24 years (150.62 per 100,000). Increases in cases from 2009 to 2010 were noted in black males and females, white males, and Hispanic females.

Table 2. Cases and Rate per 100,000 Population of Gonorrhea By Race/Ethnicity and Gender, Florida, 2010

	Males		Females	
Race and Ethnicity	Cases	Rate per 100,000	Cases	Rate per 100,000
Black, Non-Hispanic	6,048	366.9	6,229	351.7
White, Non-Hispanic	1,324	24.1	1,726	31.4
Hispanic	880	42.4	723	34.9

Co-infection and/or subsequent infections

Gonorrhea was the second most prevalent sexually transmitted infection among persons with a Human Immunodeficiency Virus (HIV) infection. In 2010, 3.5% (698) of new cases of gonorrhea were coinfected with HIV. One percent of these infections occurred in heterosexual populations, while 71% occurred among those who identified as men who have sex with men (MSM). Of those who reported a gonorrhea and chlamydia infection within the same year, 58.9% were female and 39.2% were heterosexual males. Conversely, those who reported a gonorrhea and syphilis infection in the same period were primarily identified as MSM risk behavior.

Prevention

According to the Centers for Disease Control and Prevention (CDC), the surest way to avoid transmission of any STD is to abstain from sexual contact, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected. The American Congress of Obstetricians and Gynecologists (ACOG) and CDC recommends annual gonorrhea screening for all sexually active women aged <25 years or younger, as well as for older women with risk factors such as new or multiple sex partners. When used consistently and correctly, latex condom can reduce the risk of transmission of gonorrhea. Symptoms of gonorrhea may not be noticed or present and may vary from person to person. Common symptoms for women are pain or burning during urination, increased vaginal discharge, and/or bleeding between periods. Common symptoms for men are pain or burning during urination, penile discharge, or painful or swollen testicles. Women and men who are told they have a gonorrhea infection and are treated for it should notify all of their recent sex partners (sex partners within the preceding 60 days) so they can see a health care provider and be evaluated for any possible STD exposure. Sexual activity should not resume until all sex partners have been examined and, if necessary, treated.

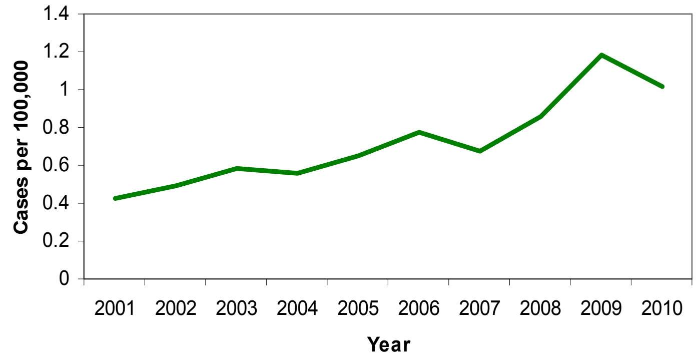
References

The American College of Obstetricians and Gynecologists, *Primary and Preventive Care: Periodic Assessments,* "Routine Screening Recommendations," 2009.

Haemophilus influenzae (Invasive Disease)

Hemophilus influenzae, Invasive Disease: Crude Data	
Number of Cases	191
2010 incidence rate per 100,000	1.0
% change from average 5 year (2005-2009) reported incidence rate	22.7%
Age (yrs)	
Mean	54.9
Median	64
Min-Max	0 - 99

Figure 1. *Haemophilus influenzae*, Invasive Disease Incidence Rate by Year of Report, Florida, 2001-2010



Disease Abstract

The incidence rate for all invasive diseases caused by *Haemophilus influenzae* has gradually increased over the past ten years (Figure 1). In 2010, the incidence rate was 22.7% higher than the average incidence from 2005 to 2009. In 2010, 191 cases were reported; all were confirmed. The number of cases reported is typically highest in the winter during the months of December through February, but there was significant disease through April 2010 and an early start in September 2010 (Figure 2). In 2010, the number of cases exceeded the previous five-year average in summer and fall (July-December), but in the spring exceeded the five-year average only in March and April. Nearly all cases of invasive disease caused by *Haemophilus influenzae* are sporadic.

The highest reported incidence rates occur in those aged under one year or in those aged >85 years (Figure 3). In 2010, the incidence rates met or exceeded the previous five-year average in all age groups except those aged 45 to 54 years. The incidence of disease in males and females does not differ significantly (0.9 per 100,000 and 1.2 per 100,000 population, respectively).

Invasive disease caused by *Haemophilus influenzae* was reported in nearly 80% (54) of the 67 counties in Florida. Counties with the highest incidence rates were distributed throughout the state.

Figure 2. *Haemophilus influenzae*, Invasive Disease Cases by Month of Onset, Florida, 2010

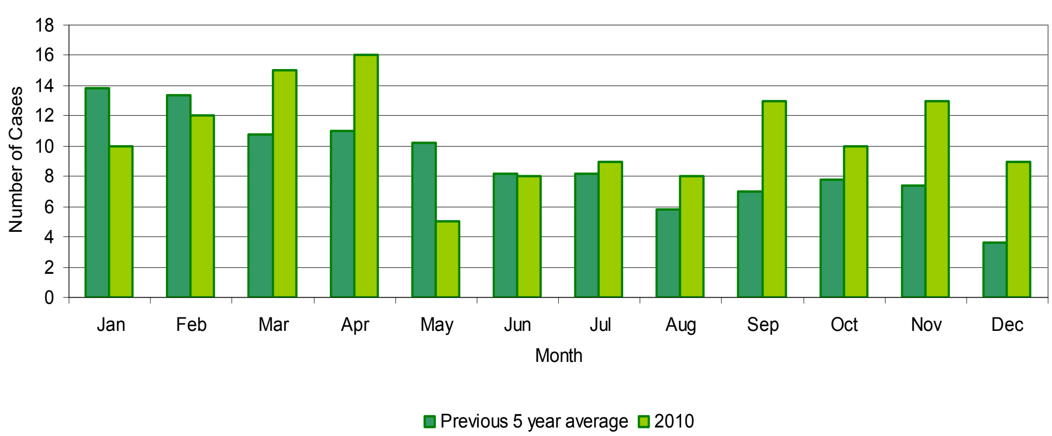
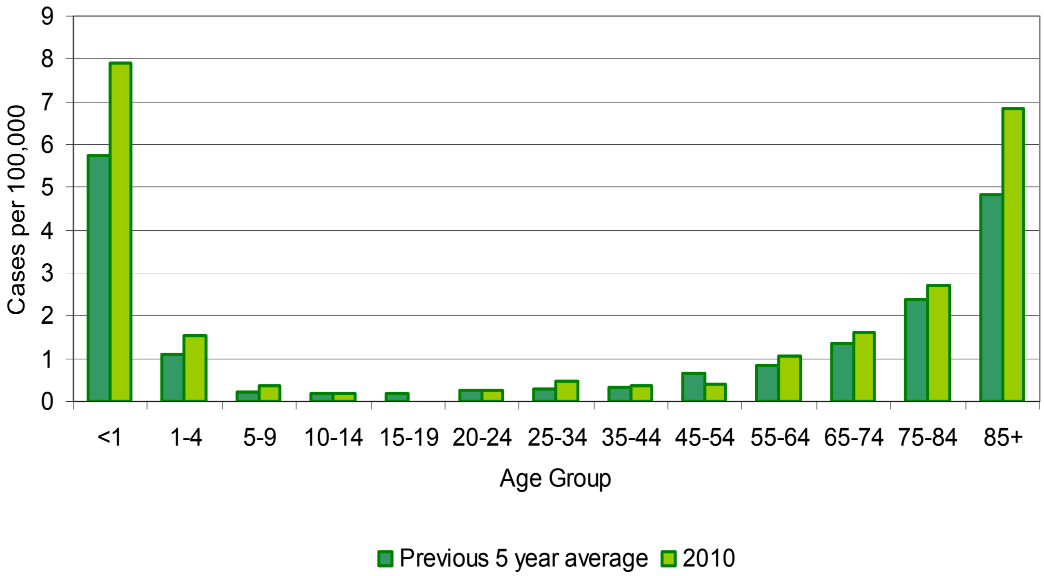


Figure 3. *Haemophilus influenzae*, Invasive Disease Incidence Rate by Age Group, Florida, 2010

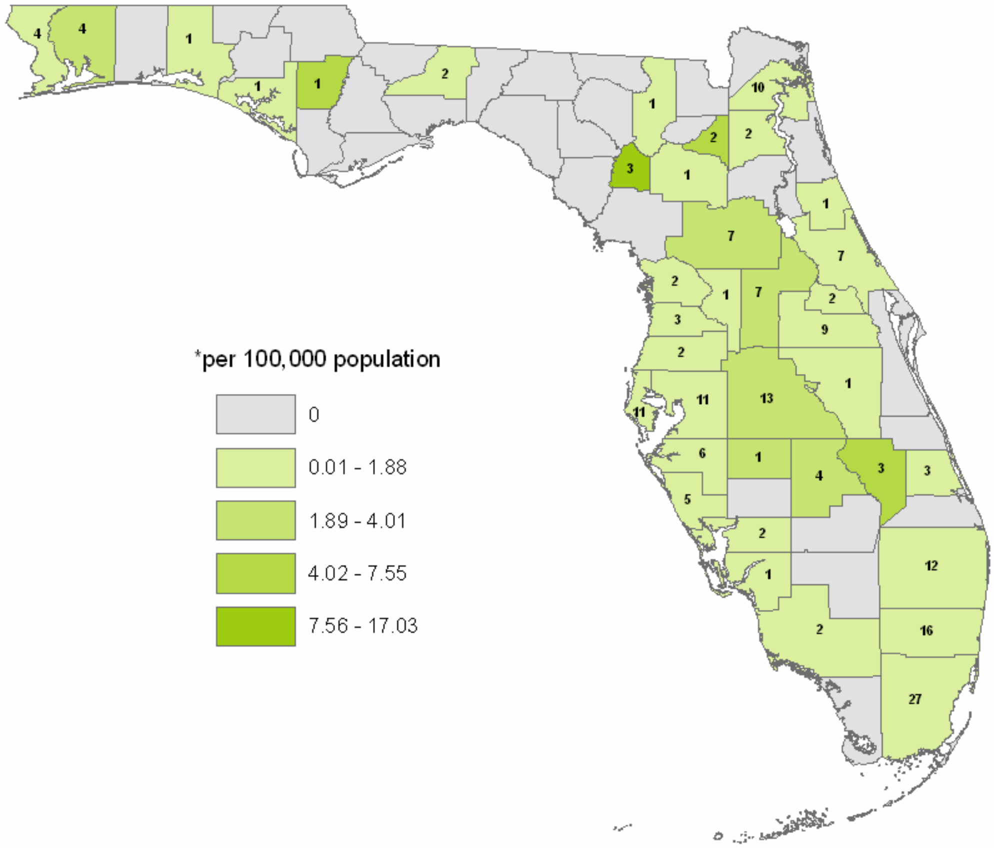


Invasive Disease in Those Under Age Five

Since serotype b represents the portion of *H. influenzae* disease that is vaccine-preventable, infections in children under age five continue to be carefully tracked to evaluate vaccination status and disease breakthrough. Meningitis and septicemia due to *Hemophilus influenzae* type b, formerly very common in preschool-age children, have almost been eradicated.

In 2010, there were four (unrelated) cases of invasive disease caused by *Haemophilus influenzae* serotype b in children under age five, all of whom were hospitalized and recovered. This represents an increase from the previous year where there was one case. The children ranged in age from 4 months – 13 months; two were white boys, one was a white girl and one was a black boy. The four-month-old child had not received any Hemophilus influenzae type b (Hib) vaccine, while the other three children were reported to have received three doses each of this vaccine.

Haemophilus influenzae Invasive Disease Cases and Incidence Rate* by County, Florida, 2010



Prevention

Conjugate vaccines against *Haemophilus influenzae* type b (Hib) for infants and children are recommended by the Advisory Committee on Immunization Practices. Additional information may be found at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4805a1.htm and http://www.cdc.gov/vaccines/ recs/schedules/downloads/child/2007/child-schedule-colorprint.pdf.

Additional Resources

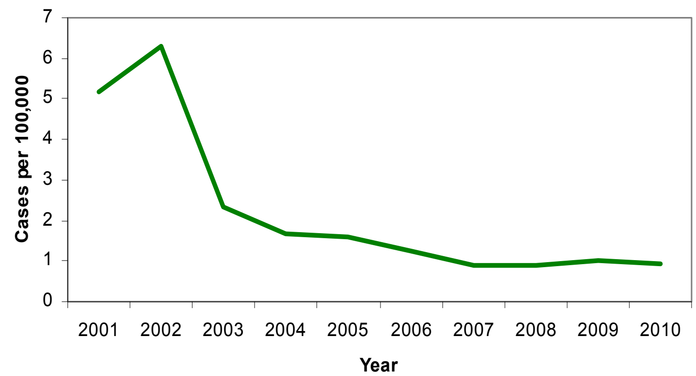
Additional information is available from the Centers for Disease Control and Prevention (CDC) at:
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/haeminfluserob_t.htm and
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4805a1.htm.

Immunization Recommendations are available from Centers for Disease Control and Prevention, "*Haemophilus* b Conjugate Vaccines for Prevention of *Haemophilus influenzae* Type b Disease Among Infants and Children Two Months of Age and Older: Recommendations of the ACIP," *MMWR*, Vol. 40, (RR01), 1991; pp.1-7, at: http://www.cdc.gov/mmwr/preview/mmwrhtml/00041736.htm.

Hepatitis A

Hepatitis A: Crude Data	
Number of Cases	178
2010 incidence rate per 100,000	1.0
% change from average 5 year (2005-2009) reported incidence rate	-16.5%
Age (yrs)	
Mean	43.2
Median	43.5
Min-Max	1 - 90

Figure 1. Hepatitis A Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

In 2010, 178 cases of hepatitis A were reported in Florida. This represents a slight decrease from the 191 cases reported in 2009. In 2010, 78% of hepatitis A cases were classified as confirmed, 62% of cases were in males, 76% of cases were in whites, and 41% were in Hispanics. Most cases were apparently isolated events and only 10% of people with cases reported contact with a person with confirmed or suspected hepatitis A infection in the two to six weeks prior to their illness. Approximately 33% of cases reported a travel history outside the U.S. and Canada in the two to six weeks prior to their illness. Additionally, 19% of cases reported that a household member had traveled outside of the U.S. or Canada. Less than 1% of cases were either a child or an employee in a daycare center, preschool, or nursery and only 3% of reported cases were employed as a food-handler during the two weeks prior to symptom onset.

The incidence rate for hepatitis A in Florida has declined markedly since 2002 (Figure 1), which mirrors a similar decline observed nationally. The annual incidence in Florida from 2007 to 2010 was near one case per 100,000. This is a substantial decrease from the annual incidence of four to six cases per 100,000 observed between 1998 and 2002. The decrease in Florida, and nationally, is likely due to increased use of the vaccine to protect against hepatitis A virus, which first became commercially available in 1995. However, there has been little if any further decline in incidence since 2007.

Figure 2. Hepatitis A Cases by Month of Onset, Florida, 2010

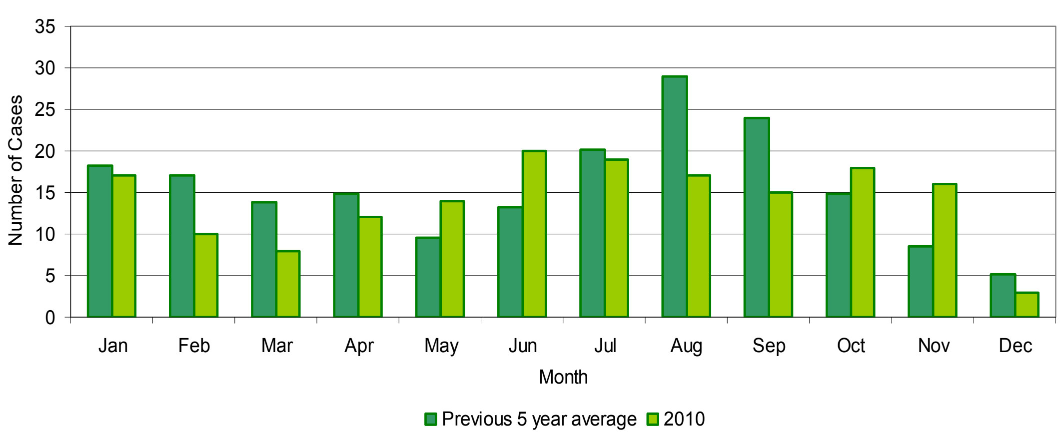
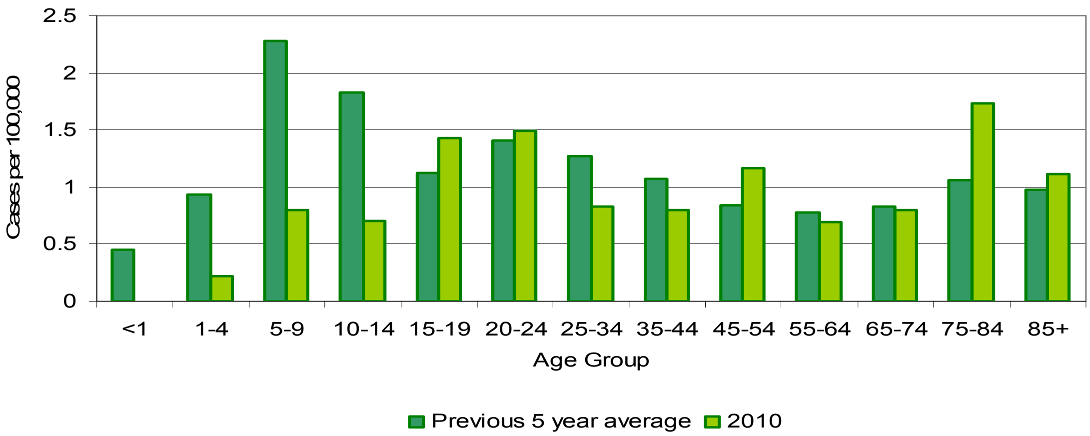


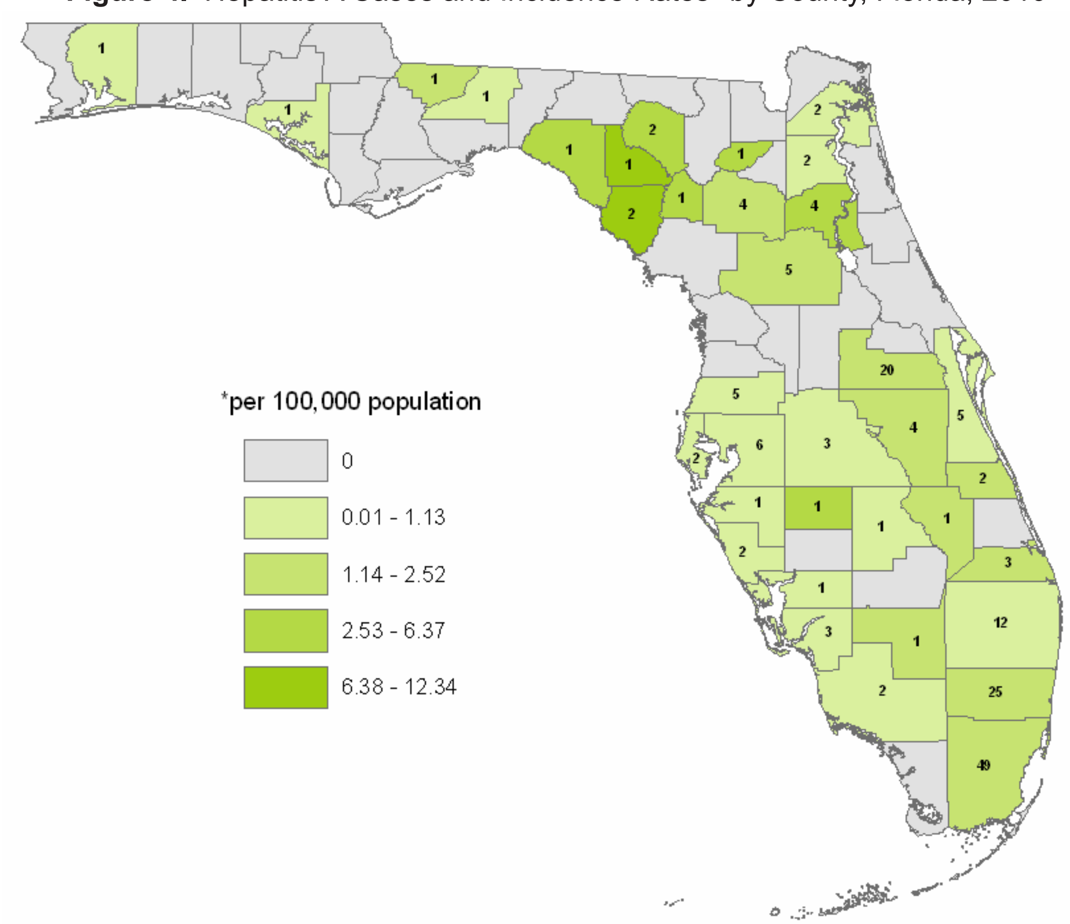
Figure 3. Hepatitis A Incidence Rate by Age Group, Florida, 2010



Hepatitis A occurs throughout the year (Figure 2) with slightly higher rates in late summer. In 2010, incidence rates were lower than the previous five-year average in many age groups but the rate increased in persons aged 15-24 years, those aged 45-54 years, as well as those aged >75 years (Figure 3). The largest decrease in incidence was observed among children aged <15 years, which is consistent with an effect of wide use of the vaccine in children. The incidence in 2010 was higher among Hispanics than among non-Hispanics (1.8 and 0.7 per 100,000, respectively).

During 2010, hepatitis A was reported in 36 of 67 counties in Florida (Figure 4).

Figure 4. Hepatitis A Cases and Incidence Rates* by County, Florida, 2010



Prevention
Currently, the single antigen, two-dose hepatitis A vaccine is recommended as part of the routine immunization schedule for all children, starting at age one. However, this is not a requirement for childcare or school entry in Florida. The doses should be spaced at least six months apart. A combined hepatitis A and hepatitis B vaccine is available for adults aged >18 years, and is administered in three doses.

In addition to routine childhood immunization, hepatitis A vaccine is also recommended for people without a documented history of vaccine or past disease who are at increased risk of infection, including:

- those traveling to developing countries,
- close contacts of adopted children newly arriving from developing countries,
- men who have sex with men (MSM),
- injection and non-injection drug users,
- persons with a clotting factor disorder,
- persons with chronic liver disease (at risk for fulminant hepatitis A), and
- persons who have occupational risk for infection.

Other efforts to prevent hepatitis A infection should focus on disrupting transmission through:

- good personal hygiene,
- hand washing after use of the toilet and before preparing food for others, and
- washing fruits and vegetables before eating.

Illness among food-handlers or persons in a childcare setting should be promptly identified and reported to allow prompt action to be taken to prevent further spread of the disease in those settings. In outbreak settings, immune-globulin may be administered to at-risk contacts of infected individuals, particularly children under one year and adults aged >40 years. Recently updated guidelines, based on results from a clinical trial, recommend using vaccine rather than immune globulin for post-exposure prophylaxis in healthy individuals aged between 1 and 40 years. All post-exposure prophylaxis should be administered within two weeks of exposure.

References
Centers for Disease Control and Prevention, "Prevention of Hepatitis A through Active or Passive Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *MMWR* 2006, 55 (RR07) pp1-23.

Centers for Disease Control and Prevention, "Update: Prevention of Hepatitis A after Exposure to Hepatitis A Virus and in International Travelers: Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *MMWR* 2007, 56 (41) pp1080-84.

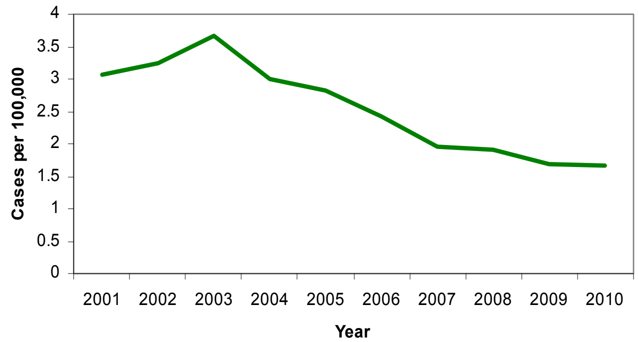
Centers for Disease Control and Prevention, "Updated Recommendations from the Advisory Committee on Immunization Practices (ACIP) for Use of Hepatitis A Vaccine in Close Contacts of Newly Arriving International Adoptees," *MMWR* 2009; 58(36): pp1006-7.

Additional Resources
Disease information is available from the Centers for Disease Control and Prevention (CDC) at:
http://www.cdc.gov/NCIDOD/diseases/hepatitis/a/index.htm.

Hepatitis B, Acute

Hepatitis B, Acute: Crude Data	
Number of Cases	315
2010 incidence rate per 100,000	1.7
% change from average 5 year (2005-2009) reported incidence rate	-22.4%
Age (yrs)	
Mean	44.8
Median	43
Min-Max	16 - 85

Figure 1. Hepatitis B, Acute Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The incidence rate for acute hepatitis B has declined gradually over the last ten years (Figure 1). The 2010 rate was 22.4% lower than the average from 2005 to 2009. In 2010, 94% of the 315 reported cases were confirmed. There is no seasonal trend for acute hepatitis B infection (Figure 2). Overall, 97% of the acute hepatitis B cases were classified as sporadic.

The highest historical incidence rates occurred in the group aged 25 to 34 years. During 2010, the incidence rate in this group was still high, but the highest incidence was among those aged 35 to 44 years, which was also true for 2007-2009. In 2010, the incidence rates were lower than the previous five-year average in all age groups except those aged 65-74 years (Figure 3). The incidence of hepatitis B is lowest in people aged < 19 years. Rates have always been low in children, and are even lower with widespread immunization. Males continue to have a higher incidence than females (2.1 and 1.2 per 100,000, respectively). The age-specific infection rates suggest that a cohort with high levels of immunity due to immunization has reached age 25 years.

Figure 2. Hepatitis B, Acute Cases by Month of Onset, Florida, 2010

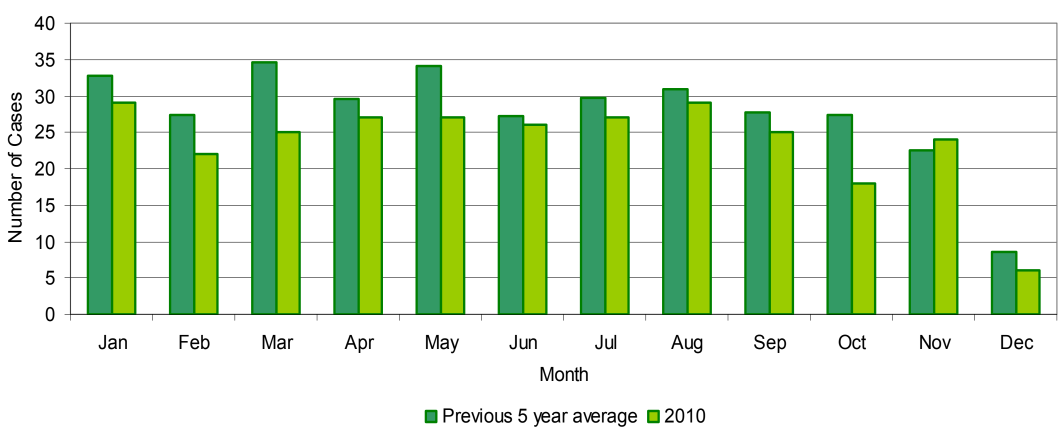
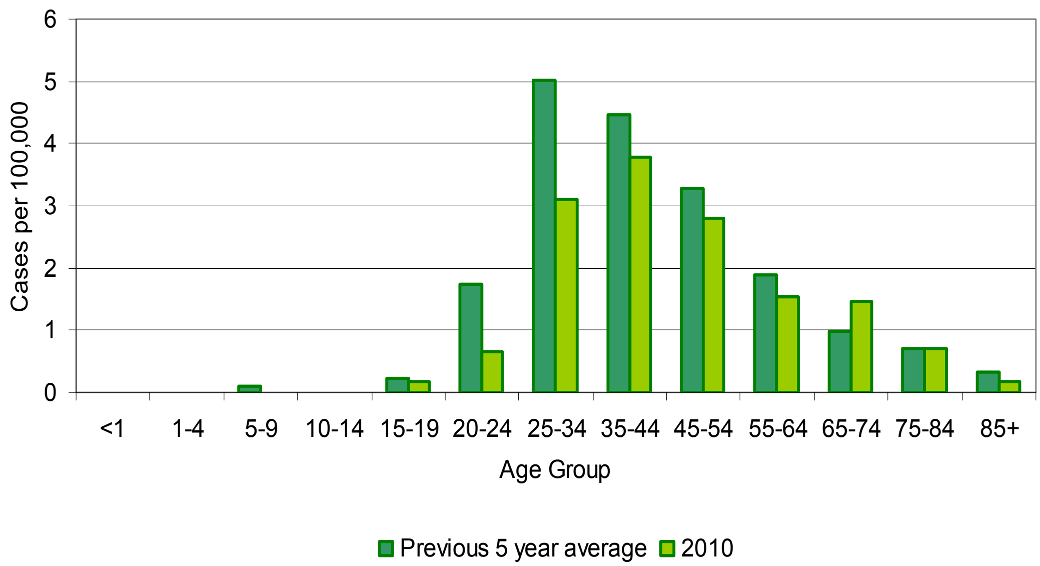


Figure 3. Hepatitis B, Acute Incidence Rate by Age Group, Florida, 2010



Hepatitis B is a vaccine-preventable disease. The symptoms of acute viral hepatic illness may prompt individuals to seek immediate medical attention. Approximately 57.5% of those diagnosed with acute hepatitis B were hospitalized. In 2010, death occurred in five of the 315 people with acute hepatitis B infection. Thirty-three people with cases reported having had contact with someone confirmed or suspected of having a hepatitis B infection, and of these, 61% reported the ill person was a sexual partner. Drug use has also been associated with hepatitis B infection. Of the 315 acute hepatitis B cases, 9% reported injection drug use and 21% reported using street drugs but not injection drug use. Hepatitis B infection has also been associated with improper sterilization or sharing of needles to create tattoos. In 2010, 13% of those with an acute hepatitis B infection had recently received a tattoo.

Sexual behavior may place an individual at risk for hepatitis B infection. However, individuals may often decline to comment on the frequency of sexual partners and/or their sexual preference. For 2009, sexual preference and frequency of sexual partnerships are summarized in Table 2. Individuals risk factors may change over time.

Acute hepatitis B was reported in 46 of the 67 counties in Florida (Figure 4). Clusters of high-rate counties can be seen in the center of the state and along the northern border.

Table 2. Distribution of the Number of Sexual Partners in the Six Months Prior to Symptom Onset for People with Acute Hepatitis B Reported in 2010

Sexual Behavior Risk Factors†	Number of male sexual partners for men *	Number of female sexual partners for men *	Number of male sexual partners for women*	Number of female sexual partners for women *
1 Sexual Partner	6%	30%	48%	1%
2-5 Sexual Partners	4%	14%	12%	1%
More than 5 Sexual Partners	2%	7%	6%	1%
No Reported Sexual Partners	59%	21%	13%	70%
Not Answered	4%	2%	0%	3%
Unknown	26%	26%	21%	25%
Total	100%	100%	100%	100%
% of Cases reporting at least one sexual partner of this gender	11%	51%	66%	3%

* Total number of acute hepatitis B positive males is 195 and females is 119. One person identified themselves as unknown. In 2010, one of the 315 Acute Hepatitis B acute cases was in a person under the age of 18.
† Sexual history is collected by asking about the number of sexual partnerships in the last 6 months prior to having symptoms, regardless of gender.

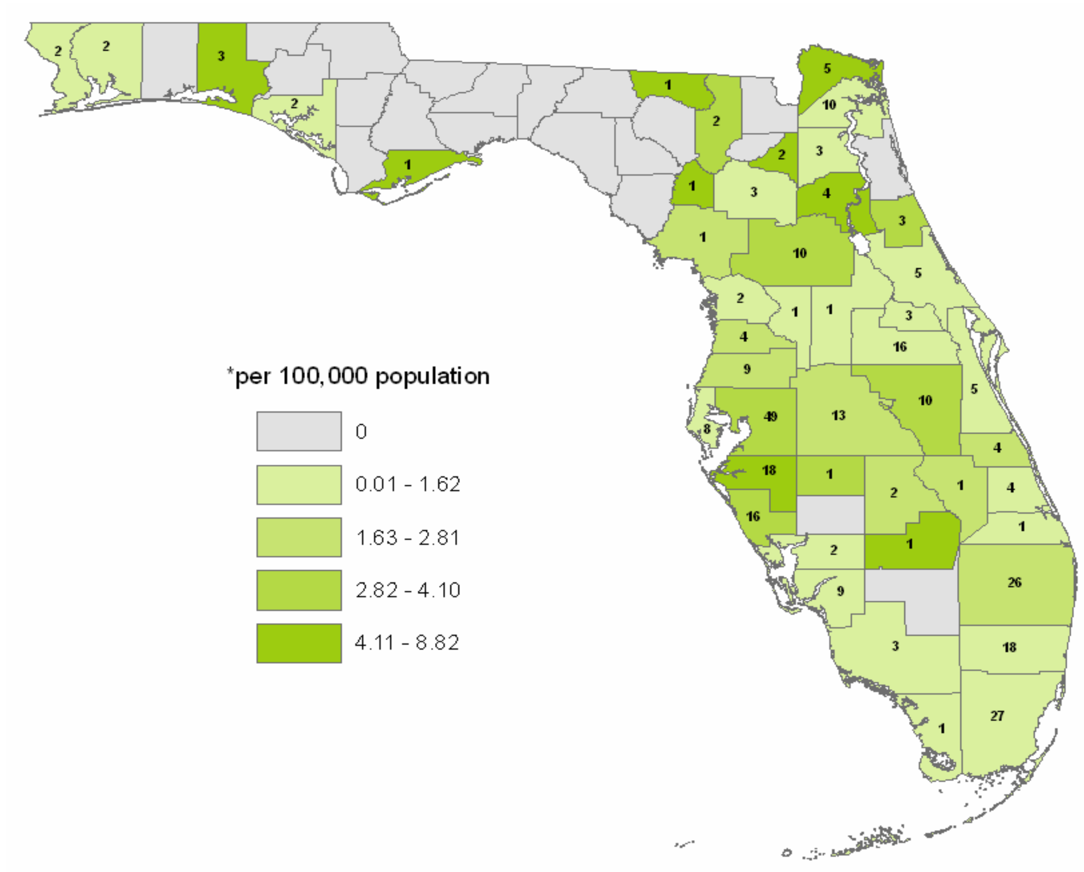
Prevention

Hepatitis B vaccines are available to protect against hepatitis B virus infection. In addition, in healthcare settings, implementing universal precautions for individuals in contact with body fluids will reduce risk to healthcare workers.

High-risk groups for infection include:

- drug users who share needles,
- healthcare workers who have contact with infected blood,
- MSM (men who have sex with men),
- people who have multiple sexual partners,
- household contacts of infected persons, and
- infants born to mothers who are hepatitis B carriers.

Figure 4. Hepatitis B, Acute Cases and Incidence Rate* by County, Florida, 2010



References

Centers for Disease Control and Prevention, "A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States," *MMWR*, Vol. 55, No. RR16, pp. 1-25, 2006.

Centers for Disease Control and Prevention, "Surveillance for Acute Viral Hepatitis-United States, 2007," *MMWR*, Vol. 58, No. SS03, 2009, pp. 1-27.

Centers for Disease Control and Prevention, "Update: Recommendations to Prevent Hepatitis B Virus Transmission-United States," *MMWR*, Vol. 48, 1999, pp. 33-34.

Centers for Disease Control and Prevention, "Hepatitis B Vaccination-United States, 1982- 2002," *MMWR* Report, Vol. 51, 2002, pp. 549-52, 563.

American Academy of Pediatrics, *Red Book 2009: Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics Press, Elk Grove Village, Illinois, 2009.

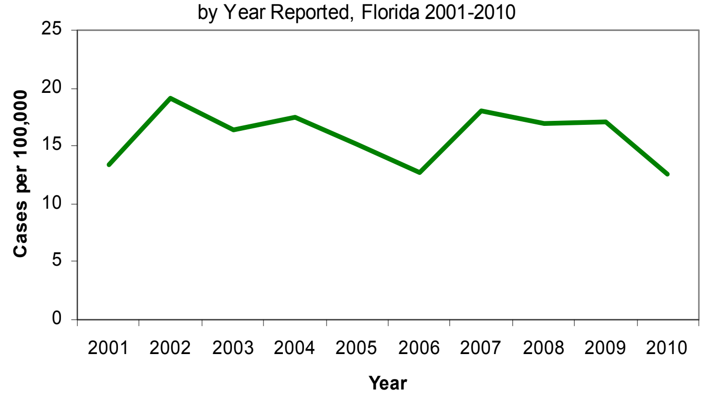
Additional Resources
Disease information is available from the Centers for Disease Control and Prevention (CDC) website at:
http://www.cdc.gov/ncidod/diseases/hepatitis/b/index.htm and
http://www.cdc.gov/ncidod/diseases/hepatitis/recs/index.htm.

Disease information is also available from the World Health Organization (WHO) website at:
http://www.who.int/mediacentre/factsheets/fs204/en/.

Hepatitis B (HBsAG+) Pregnant Women

Hepatitis B (HBsAg+) Pregnant Women: Crude Data	
Number of Cases	438
2010 incidence rate per 100,000	12.6
% change from average 5 year (2005-2009) reported incidence rate	-20.9%
Age (yrs)	
Mean	29.4
Median	29
Min-Max	14 - 44

Figure 1. Hepatitis B (HBsAg+) Pregnant Women Incidence Rate by Year Reported, Florida 2001-2010



Disease Abstract
There were 438 pregnant women who tested positive for the hepatitis B surface antigen (HBsAg+) in 2010, which is a decrease from 598 women in 2009. During 2010, there was one Florida-born infant identified as a perinatal case of hepatitis B (disease code 07744). The child had received all three recommended doses of hepatitis B-containing vaccine and also received hepatitis B immune globulin after birth. In 2009, there were no Florida-born infants identified as perinatal cases of hepatitis B.

Prevention
Prevention begins with early identification of HBsAg-positive pregnant women. When a pregnant woman enters the hospital for delivery, the accompanying prenatal record alerts the hospital's maternity staff of the mom's positive HBsAg status and the subsequent need for prophylactic treatment for the infant within the 12-hour time period following birth. Hepatitis B immune globulin (HBIG) is prepared from human plasma known to contain a high titer of antibody to HBsAg (anti-HBs). A regimen combining HBIG and hepatitis B vaccine is 85%-95% effective in preventing HBV infection when administered at birth to infants born to HBsAg+ mothers. HBIG and the first dose of hepatitis B vaccine should be administered within 12 hours of birth. The second dose should be given at one month of age and the third dose at six months of age. Dose three of hepatitis B vaccine should not be given before six months of age. These infants should have serologic testing at 9 to 18 months of age to determine if a protective antibody response developed after vaccination. Infants who do not respond to the primary vaccination series should be given three additional doses of hepatitis B vaccine in a zero, one to two, four to six month schedule, and have the HBsAg and anti-HBs blood tests repeated to determine response. Vaccine for children and adults is also available in combination vaccines.

References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases,* 4th ed., 2008, Chapter 4.

Centers for Disease Control and Prevention, "A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP); Part 1: Immunization of Infants, Children, and Adolescents," *MMWR*, Vol. 54, No. RR-16, 2005.

Centers for Disease Control and Prevention, "A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP) Part II: Immunization of Adults," *MMWR*, Vol. 55, No. RR-16, 2006.

Additional Resources

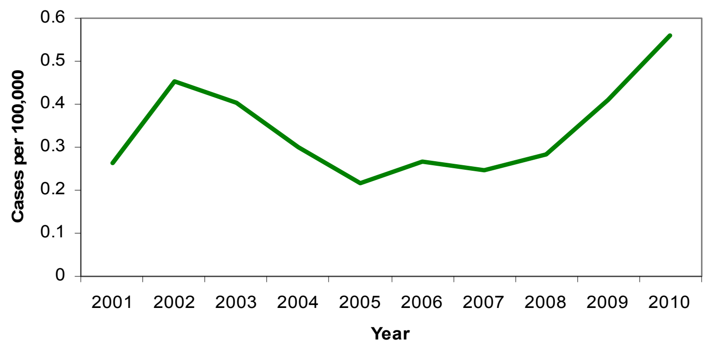
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/vaccines/vpd-vac/hepatitis/default.htm.

Recommended immunization schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm.

Hepatitis C, Acute

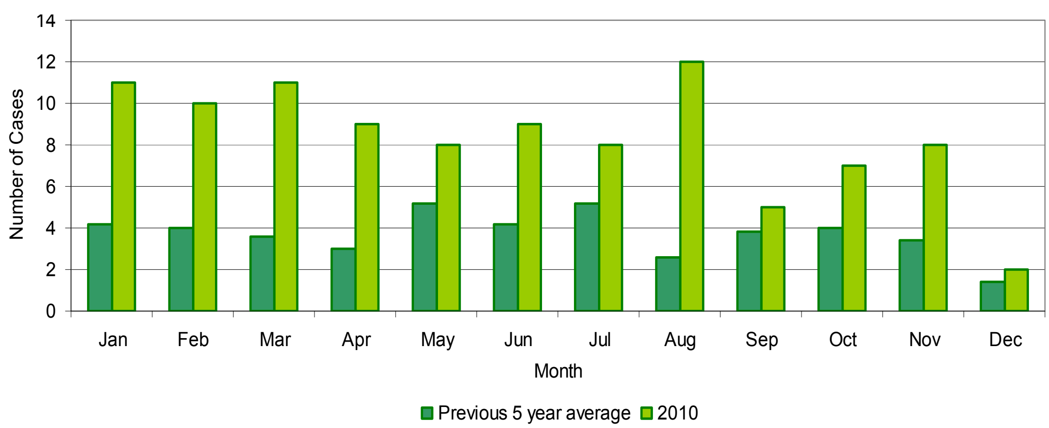
Hepatitis C, Acute: Crude Data	
Number of Cases	105
2010 incidence rate per 100,000	0.6
% change from average 5 year (2005-2009) reported incidence rate	97.0%
Age (yrs)	
Mean	37.9
Median	36
Min-Max	11 - 89

Figure 1. Hepatitis C, Acute Incidence Rate by Year Reported, Florida, 2001-2010



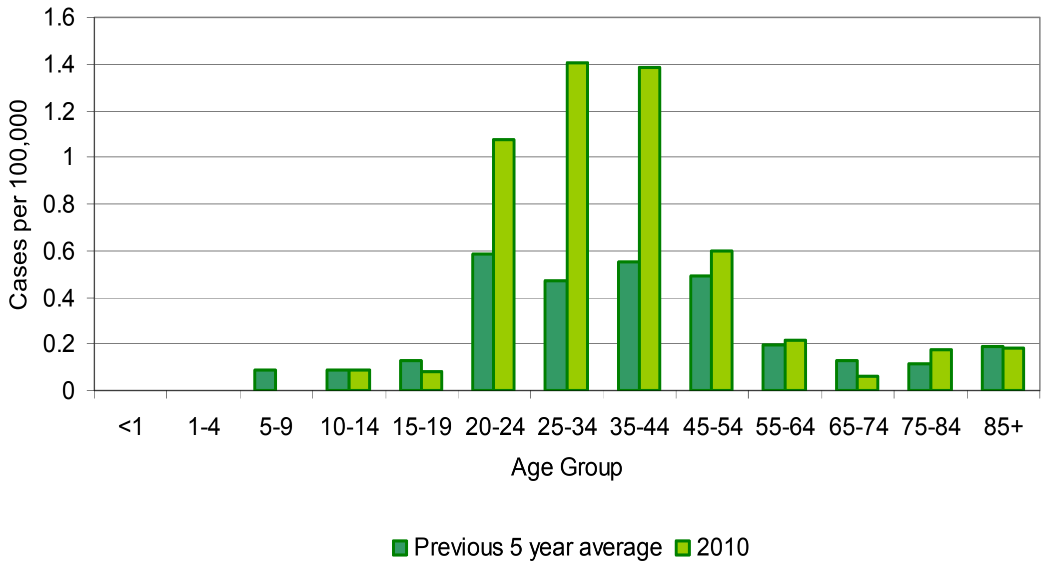
Disease Abstract
The incidence rate for acute hepatitis C has been variable over the last ten years. It was low from 2005 to 2008 but has been increasing since 2008 (Figure 1). In 2010, there was a 97.0% increase in comparison to the average incidence from 2005 to 2009. A total of 105 cases were reported in 2010. Fifty-three percent of the cases were classified as confirmed. The hepatitis C acute surveillance case definition changed in 2008, leading to more cases being classified as confirmed compared to previous reporting years (2006: 36%; 2007: 34.7%; 2008: 60.4%; 2009: 68.8%; 2010: 53.3%). There is no seasonal trend for acute hepatitis C infection (Figure 2). In 2010, no acute hepatitis C cases were classified as outbreak-associated and no deaths were reported. Some acute infections may have been erroneously reported or classified as chronic infections. Newly recognized chronic infections in young adults share many risk factors and other characteristics with acute cases.

Figure 2. Hepatitis C, Acute Cases by Month of Onset, Florida, 2010



Overall, the highest incidence rates for 2010 occurred among persons aged 20 to 44 years, which is consistent with historical trends. However, when the cases are broken down into smaller age groups, the historical trend is not as consistent. In 2010, the incidence rates were higher than the previous five-year average in all age groups in which cases were reported except for those aged 15 to 19 years, 65 to 74 years, and >84 years old (Figure 3).

Figure 3. Hepatitis C, Acute Incidence Rate by Age Group, Florida, 2010



The passive transfer of maternal Hepatitis C Virus (HCV) antibodies may be present in infants up to 18 months of age. A positive Anti-HCV result in an infant under 18 months of age is not a true indicator of hepatitis C infection. In 2010, men and women had similar incidences of acute hepatitis C (0.6 and 0.5 per 100,000, respectively). The incidence rates in whites are greater than those in non-whites.

Prevention

Use universal precautions for individuals in contact with body fluids in healthcare settings. High-risk groups for infection include:

- drug abusers who share needles,
- healthcare workers who have contact with infected blood,
- men who have sex with men,
- people who have multiple sexual partners,
- household contacts of infected persons, and
- infants born to mothers who are hepatitis C carriers.

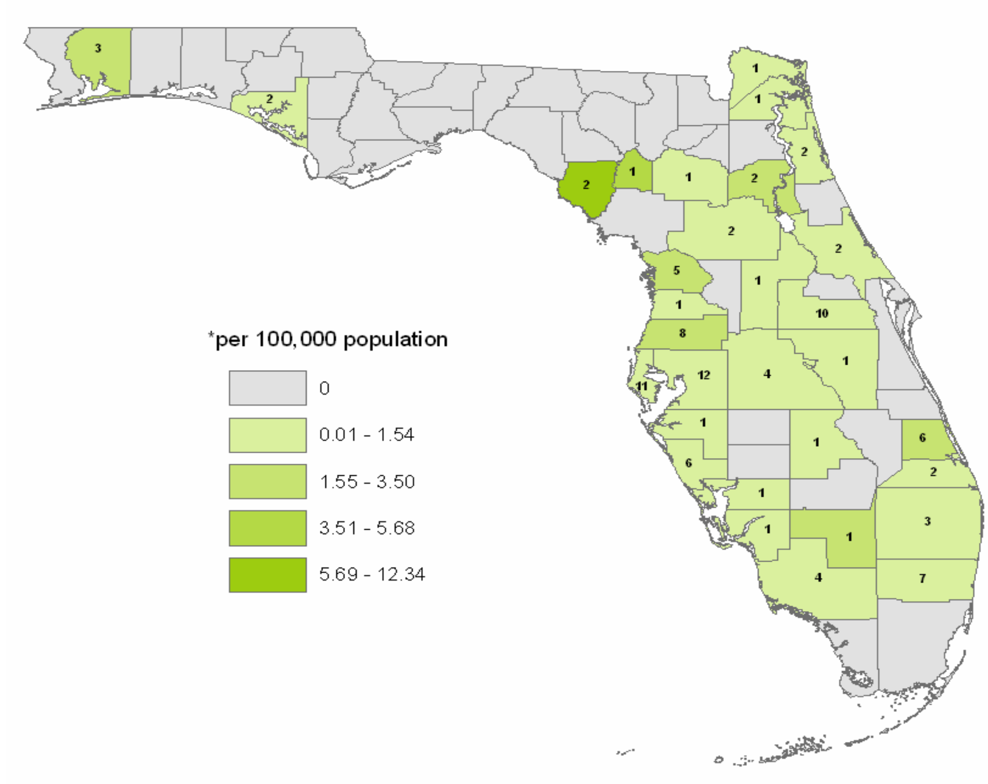
Selected risk factors for acute hepatitis C infections in 2010 are summarized in Table 1.

Table 1. Hepatitis C, Acute Cases and Risk Factors, Florida, 2010

	Male (N=57)	Female (N=48)
Body piercing	5.26%	4.17%
Tattoo	17.54%	27.08%
Injection drug use	38.60%	29.17%
Street drug use	42.11%	29.17%

Acute hepatitis C cases were reported in 31 of 67 counties in Florida (Figure 4).

Figure 4. Hepatitis C, Acute Cases and Incidence Rate* by County, Florida, 2010



References

Centers for Disease Control and Prevention, "Hepatitis C Virus Infection Among Adolescents and Young Adults --- Massachusetts, 2002-2009," *MMWR*, Vol. 60 (17); 2011 pp 537-541.

Centers for Disease Control and Prevention, "Recommendations for Prevention and Control of Hepatitis C Virus (HCV) Infection and HCV-Related Chronic Disease," *MMWR*, Vol. 47, No. RR-19, 1998, pp. 1-39.

Centers for Disease Control and Prevention, "Sexually Transmitted Diseases Treatment Guidelines, 2010," *MMWR*, Vol. 59, No. RR-12, 2010, pp. 1-110.

J.L. Dienstag, "Sexual and Perinatal Transmission of Hepatitis C," *Hepatolog*y, Vol. 26, No. 66S - 70S, 1997.

American Academy of Pediatrics, *Red Book 2009*: *Report of the Committee on Infectious Diseases,* 28th ed., Elk Grove Village, IL, American Academy of Pediatrics Press, 2009.

Centers for Disease Control and Prevention, *Frequently Asked Questions About Hepatitis C*, accessed at: http://www.cdc.gov/ncidod/diseases/hepatitis/c/faq.htm#1a.

Additional Resources

Additional information on hepatitis prevention in Florida can be accessed via the Hepatitis Prevention Program at: http://www.doh.state.fl.us/disease_ctrl/aids/hep/index.html.

Lead Poisoning, 2009

Disease Abstract

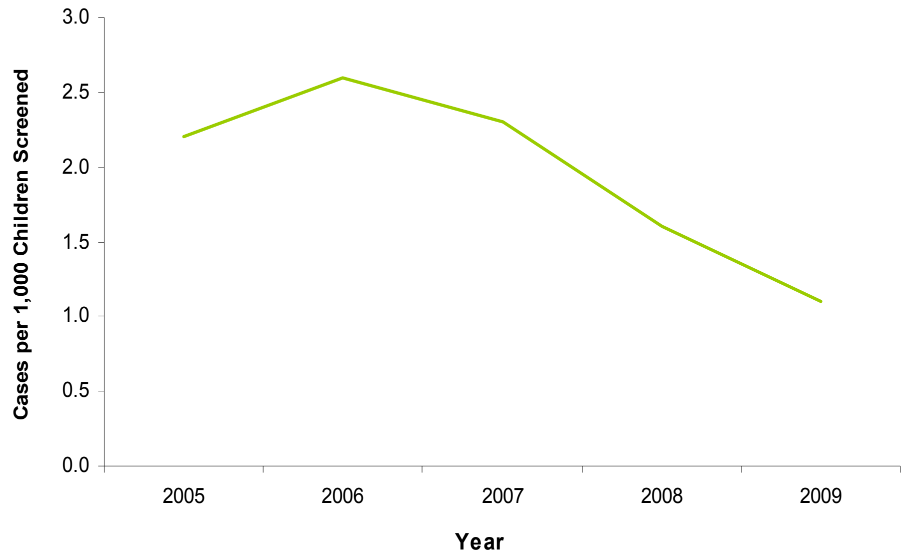
Clinically, lead poisoning is defined as a blood lead concentration of 10 µg/dL or greater. Lead can cause adverse effects at blood levels with no clinical detectable symptoms. However, the long-term effects of the disease may be severe and include neurological defects and cognitive impairments. Adverse health effects are more pronounced and more clinically evident at higher levels of blood lead. Deterioration of lead-based paint in housing built before 1978 continues to be the most important lead source for children in Florida. There are an estimated 1.4 million homes in Florida with lead-based paint. Lead tainted dust can be ingested or inhaled. Children aged <6 years (72 months) are at highest risk for lead poisoning because they are more likely to place lead contaminated hands and toys in their mouth. Over the last three decades, blood levels among U.S. children have been declining due to the removal of lead from residential paint, and especially removal of lead from gasoline. Despite these policy changes, lead exposure continues to be of public health concern for young children.

The Florida Lead Poisoning Prevention and Healthy Homes (LPPHH) program recommends blood lead screening among children aged <72 months who are at high risk for lead poisoning. Children at high risk include children living in pre-1978 housing, Medicaid-eligible children, children adopted outside of the U.S., refugees, and immigrants. There were 34% more children screened for lead poisoning in Florida in 2009 than in 2005 (Figure 1). The increase in screening numbers and rates over the five-year period may be partially due to the increase in the number of testing facilities that are routinely conducting blood lead screening of children. Conversely, the number of reported lead poisoning cases declined by 39% between 2005 and 2009. This reduction in the number of cases from 2005 to 2009 does not necessarily mean that lead poisoning prevalence rates among Florida children aged <72 months are declining. The population screened each year may not consistently represent the population at high risk for lead poisoning. To get a better understanding of trends in lead poisoning, the LPPHH program is planning to perform analyses to determine screening rates (from 2008 to 2010) among Medicaid-eligible children, the largest high risk group for lead poisoning in Florida.

Figure 1. Reported Blood Lead Screenings and Newly Identified Cases of Lead Poisoning, Florida, 2005 to 2009

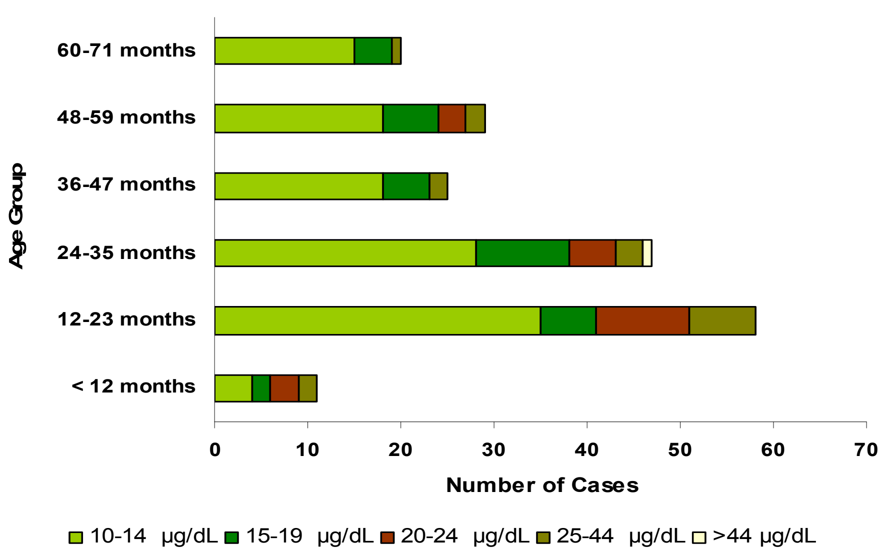
The statewide rate of reported new cases per 1,000 children screened is illustrated in Figure 2. Over the five year period 2005-2009, a 50% decline in the number of new cases per 1,000 children screened was observed.

Figure 2. Rate of Newly Identified Cases of Lead Poisoning per 1,000 Children Screened, Florida, 2005 to 2009



In 2009, 31% (N=58) of identified lead poisoned children were among children aged 12 to 23 months (Figure 3). Children in this age group are at increased risk for lead poisoning and the Centers for Disease Control and Prevention (CDC) and Florida Medicaid Services highly recommend that they receive initial blood lead screening. Over the past five years, most new cases were reported with blood lead levels (BLLs) ranging from 10 to 14 µg/dL. In 2009, 60% of reported new cases in children aged 12 to 23 months had BLLs within this range.

Figure 3. Number of Newly Identified Cases of Lead Poisoning by Age and Blood Lead Level, Florida, 2009



In 2009, information on race was captured on blood lead test reports for three distinct categories: Asian/Pacific Islander, black, and white. Of the number of new cases with reported race, the majority were either white or black (Figure 4). For 43% (N=82) of the blood lead test data reported in 2009, race was not reported. Therefore, the 2009 data may not clearly portray the distribution of lead poisoned children by race.

Figure 4. Number of Newly Identified Cases of Lead Poisoning by Race, Florida, 2009

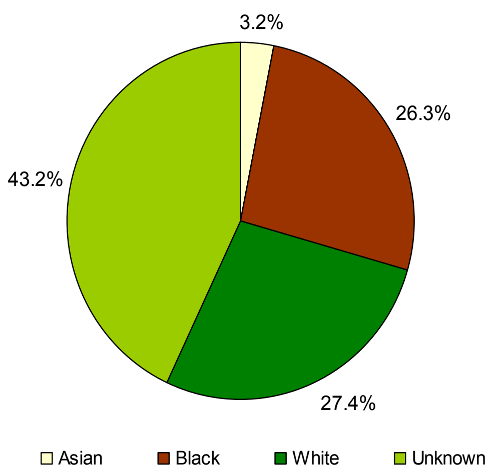


Figure 5. Number of Newly Identified Cases of Lead Poisoning by Gender, Florida, 2009

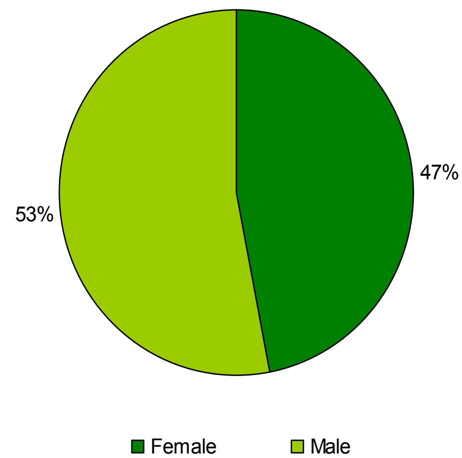
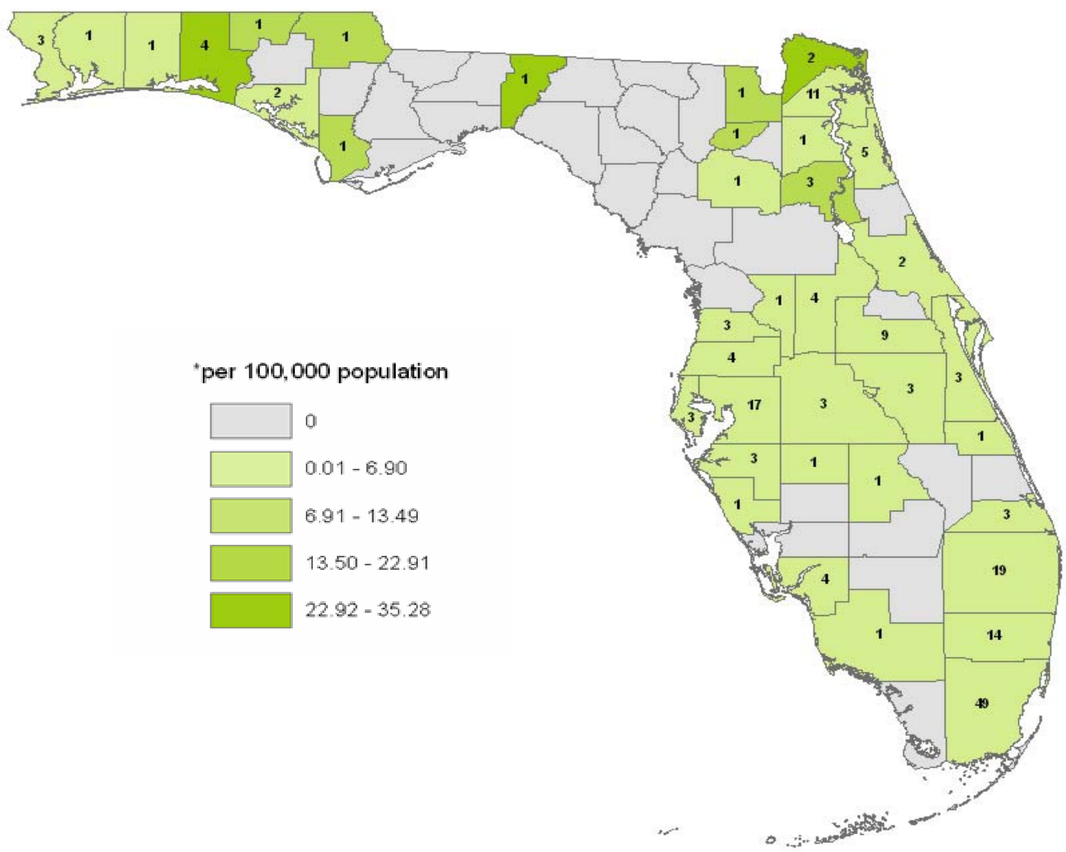


Figure 5 illustrates the number of reported new cases of lead poisoning in Florida by gender for 2009. Of the 190 reported new cases, there were 89 (47%) females and 101 (53%) males. There were a slightly larger proportion of elevated BLLs in males versus females. There was a larger gender difference among whites (12%) than among blacks.

The case rate, defined as the number of reported new cases divided by the number of children screened, was computed for each county. In 2009, the case rate for lead poisoning was higher in some rural counties such as Nassau, Jefferson and Walton (8.9 to 16.6 cases per 1,000 children screened) than in urban counties such as Miami-Dade, Palm Beach, and Hillsborough. The case rates in these three urban counties with active screening programs varied from 0.5 to 1.4 cases per 1,000 children screened. However, comparing the case rate between counties may be misleading since rates will be highly affected by the proportion of the population screened. Smaller counties tend to have lower numbers of at-risk children compared to larger counties. Furthermore, a small number of cases detected among a small group of children screened for the disease may result in a higher case rate. For example, twenty-five times as many lead poisoning cases were identified in Miami-Dade County (N=49) in 2009 than in Nassau County (N=2) during this time period. However, the Miami-Dade case rate (1.2 cases per 1,000 children screened) was lower than Nassau County (12.2 cases per 1,000 children screened), partly because more than 200 times as many children were screened for lead poisoning in Miami-Dade County (N=41,518) than in Nassau County (N=164).

Lead Poisoning Cases and Case Rates* in Those under 72 Months of Age by County, Florida, 2009



Prevention

Lead poisoning is a preventable disease. The most effective method for preventing lead poisoning is to eliminate lead sources, especially from homes or areas that are frequently visited by children. Children who are at high risk for lead exposures should be tested and follow-up care should be provided for those who test positive for lead poisoning. Providers, parents, caregivers, and household members should be educated on the risks associated with lead poisoning. The LPPHH program provides guidance to county health department case managers on screening requirements and medical management for children aged <72 months. Environmental inspections are recommended for those children with BLL ≥15μg/dL to identify the source of lead. Mitigation strategies are recommended to prevent further exposures to lead.

Additional Information
The Florida LPPHH program website also includes additional information and disease statistics at: http://www.doh.state.fl.us/environment/medicine/lead/index.

Additional statistics are available from the Centers for Disease Control and Prevention website at: http://www.cdc.gov/nceh/lead/faq/about.htm.

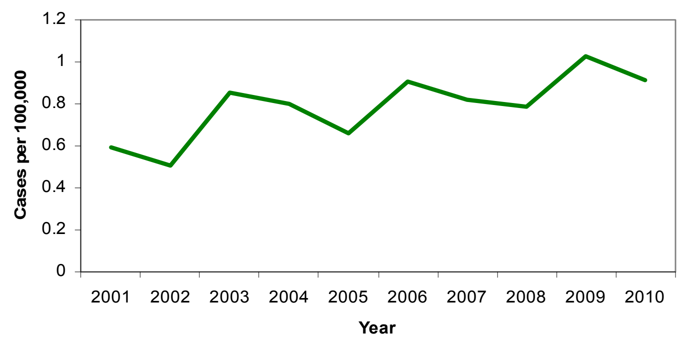
Florida Childhood Lead Poisoning Screening and Case Management Guide is available at: http://www.doh.state.fl.us/environment/medicine/lead/pdfs/ChildhoodLeadPoisoningScreeningandCaseManagementGuide.pdf.

The U.S. Census Bureau's 2009 American Community Survey has additional information about lead sources in homes in Florida at: http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=04000US12&-qr_name=ACS_2009_1YR_G00_DP4&-context=adp&-ds_name=&-tree_id=309&-_lang=en&-redoLog=false&-format=.

Legionellosis

Legionellosis: Crude Data	
Number of Cases	172
2010 incidence rate per 100,000	0.9
% change from average 5 year (2005-2009) reported incidence rate	9.1%
Age (yrs)	
Mean	62.6
Median	63
Min-Max	10 - 98

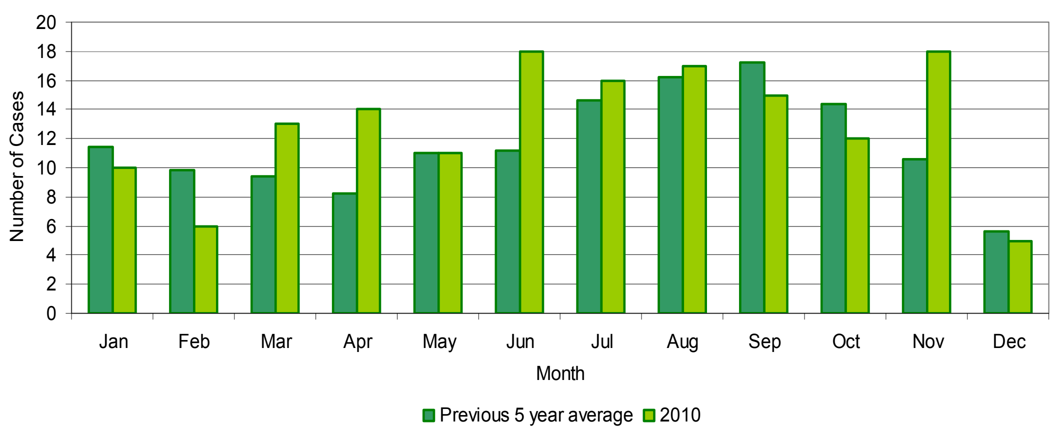
Figure 1. Legionellosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

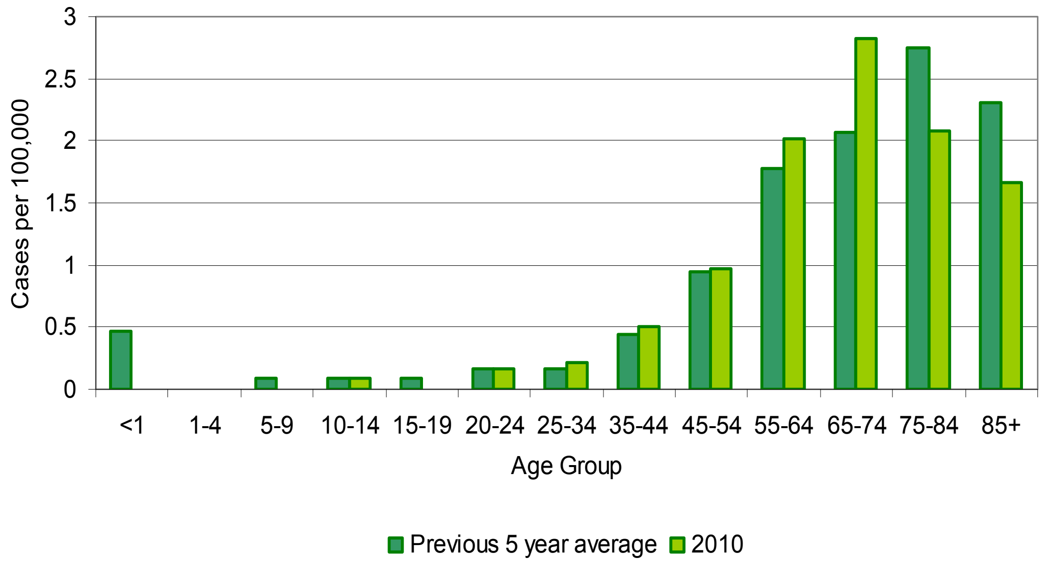
The Florida incidence rate for legionellosis has steadily increased over the last ten years (Figure 1). In 2010, the incidence rate was 9.1% higher than the average from 2005 to 2009. In 2010, 172 cases were reported, of which 100% were classified as confirmed cases and 5.8% were acquired outside of Florida. The number of cases reported tends to increase in the summer months. In 2010, the number of cases exceeded the previous five-year average for many of the months, most notably March, April, June, and November (Figure 2). Only one legionellosis case in a Florida resident in 2010 was associated with an outbreak. This case was associated with staying at a hotel in Miami-Dade County where an investigation involving 10 cases occurred, beginning in 2009. Additional cases were detected, but were all in foreign or out-of-state persons. (See the Summary of Notable Outbreaks and Case Investigations section of the 2009 report.)

Figure 2. Legionellosis Cases by Month of Onset, Florida, 2010



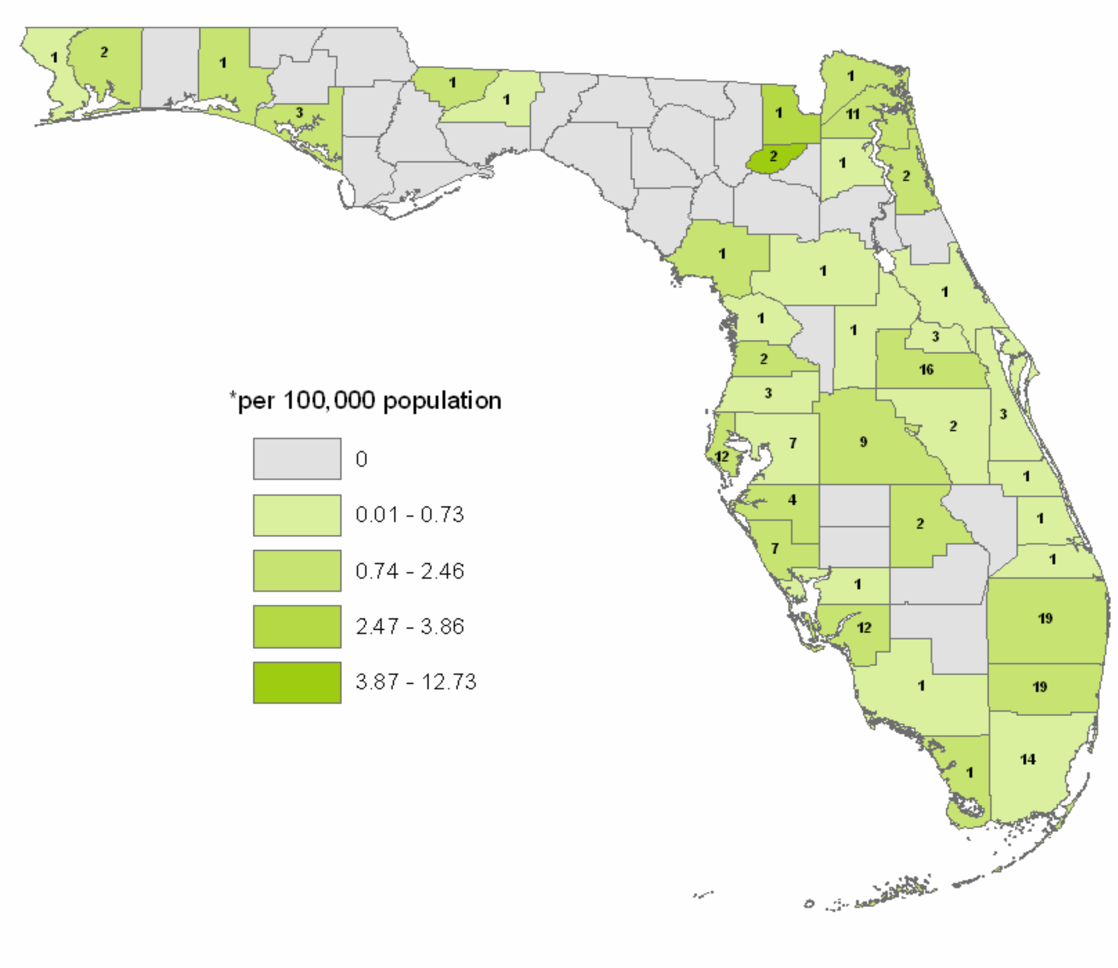
The highest incidence rates continue to occur among adults aged 45 years and older with rates ranging from 1.0 per 100,000 in the 45-54 age group to 2.8 per 100,000 in the 65-74 age group. In 2010, the incidence rates were higher than the previous five-year average in most age groups. Males continue to have a higher incidence than females and this gap widened in 2010 (1.3 and 0.6 per 100,000, respectively).

Figure 3. Legionellosis Incidence Rate by Age Group, Florida, 2010



Legionellosis cases were reported in 39 of 67 counties in Florida (Figure 4). Counties in the central, south-western, and southeastern regions of Florida reported the highest incidence rates.

Figure 4. Legionellosis Cases and Incidence Rates* by County, Florida 2010



Prevention

Recommendations to decrease the proliferation of or exposure to *Legionella* bacteria include:

- Drain cooling towers when not in use, and mechanically clean periodically to remove scale and sediment.
- Use appropriate biocides to limit the growth of slime-forming organisms.
- Do not use tap water in respiratory therapy devices.
- Maintain hot water system temperatures at ≥ 50°C (122°F).
- Provide proper maintenance of hot tub/spas.

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ncidod/dbmd/diseaseinfo/legionellosis_g.htm.

Leptospirosis

Description
Leptospirosis is caused by the spirochete *Leptospira interrogans*, with over 250 pathogenic serovars identified. Common serovars found in the U.S. include *Icterohaemorrhagiae, Australis, Sejroe, Canicola, Tarassovi, Gryppotyphosa*, and *Bataviae*. The organisms are maintained in the kidneys of many wild and domestic animal reservoirs. Organisms are shed in the urine, amniotic fluid and placenta, and can survive for weeks to months in water or moist environments. At greatest risk are those working with animals, or those exposed to wet (freshwater) conditions, such as sewer or sugarcane field workers, military personnel, and outdoor enthusiasts. The disease is more common in males, primarily because of occupational or recreational related exposures. The disease appears to be emerging in peri-urban areas, and flood conditions have also led to outbreaks in urban environments in other countries. In 2010, the case definition was updated to add a probable category so that people with a single serum microagglutination (MAT) titer >200, a positive EIA IgM, or detection of pathogenic *Leptospira* by nucleic acid test (NAT) may be classified as having cases.

Disease abstract
Two probable cases of leptospirosis were reported in 2010. One case involved a black man aged 72 years who was exposed and became ill while traveling in Jamaica. The second case involved a white man aged 17 years who is believed to have been exposed while hog hunting in North Carolina when he splashed creek water onto his face and may have swallowed some of the water. Both were treated and recovered.

Prevention
At-risk workers should use appropriate personal protective equipment including boots, gloves and aprons; rodent populations should be controlled; and contact with potentially infectious animal urine, water, and other materials should be avoided.

References
Control of Communicable Diseases Manual. 19th ed. Ed. David L. Heymann. American Public Health Association, 2008.

Red Book: 2009 Report of the Committee on Infectious Diseases. 28th ed. Eds. Pickering LK, Baker CJ, Long SS, McMillan JA. American Academy of Pediatrics, 2009.

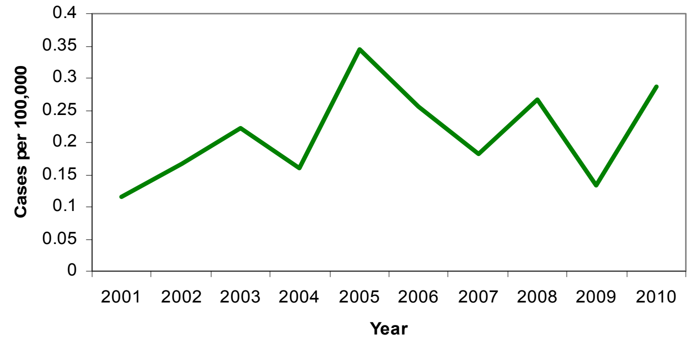
Additional Resources
Information regarding leptospirosis in Florida can be obtained at the Florida Department of Health website at: http://www.doh.state.fl.us/Environment/medicine/arboviral/Zoonoses/Zoonotic-index.html.

Additional information can be found at the CDC website at:
http://www.cdc.gov/nczved/divisions/dfbmd/diseases/leptospirosis.

Listeriosis

Listeriosis: Crude Data	
Number of Cases	54
2010 incidence rate per 100,000	0.3
% change from average 5 year (2005-2009) reported incidence rate	21.9%
Age (yrs)	
Mean	57.4
Median	66
Min-Max	0 - 90

Figure 1. Listeriosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The reported incidence rate for listeriosis has shown no clear trend over the last ten years (Figure 1). In 2010, there was a 21.9% increase in comparison to the previous five-year average incidence. A total of 54 cases were reported in 2010, which is more than double what was reported in 2009 (24 cases). Historically, the number of cases reported tends to increase slightly in the late summer months with a high number of cases in August, September, and October. In 2010, a similar trend was observed but with notably early peaks in January, as well as in May and June (Figure 2). These peaks do not appear to be outbreak-related and all cases were classified as sporadic.

Figure 2. Listeriosis Cases by Month of Onset, Florida, 2010

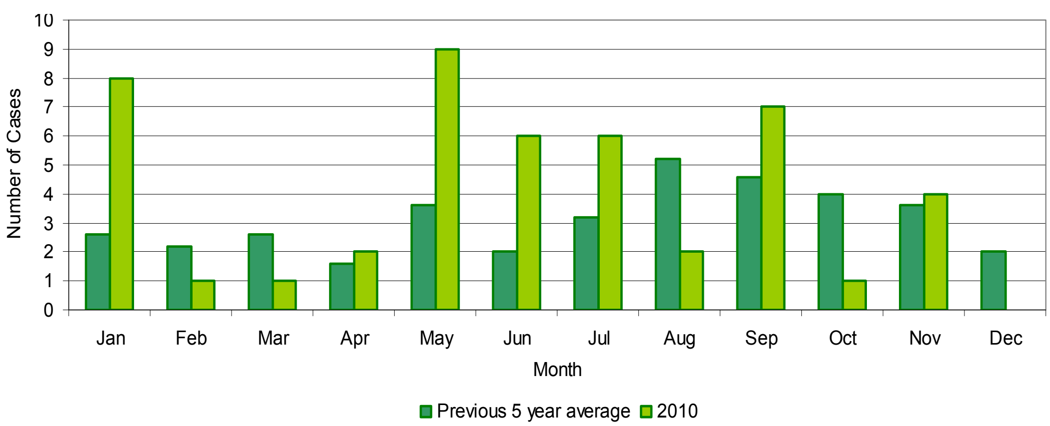
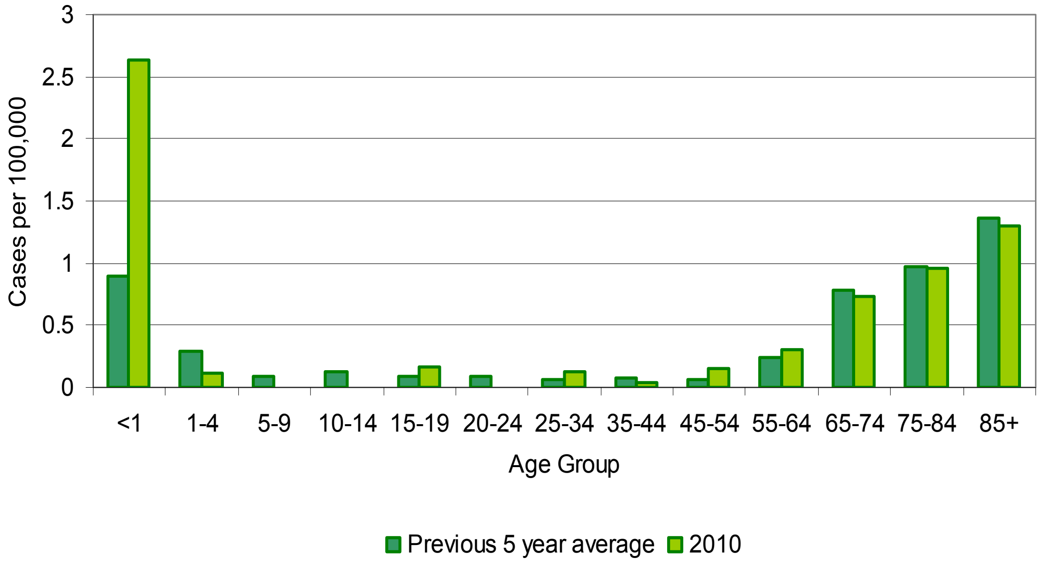


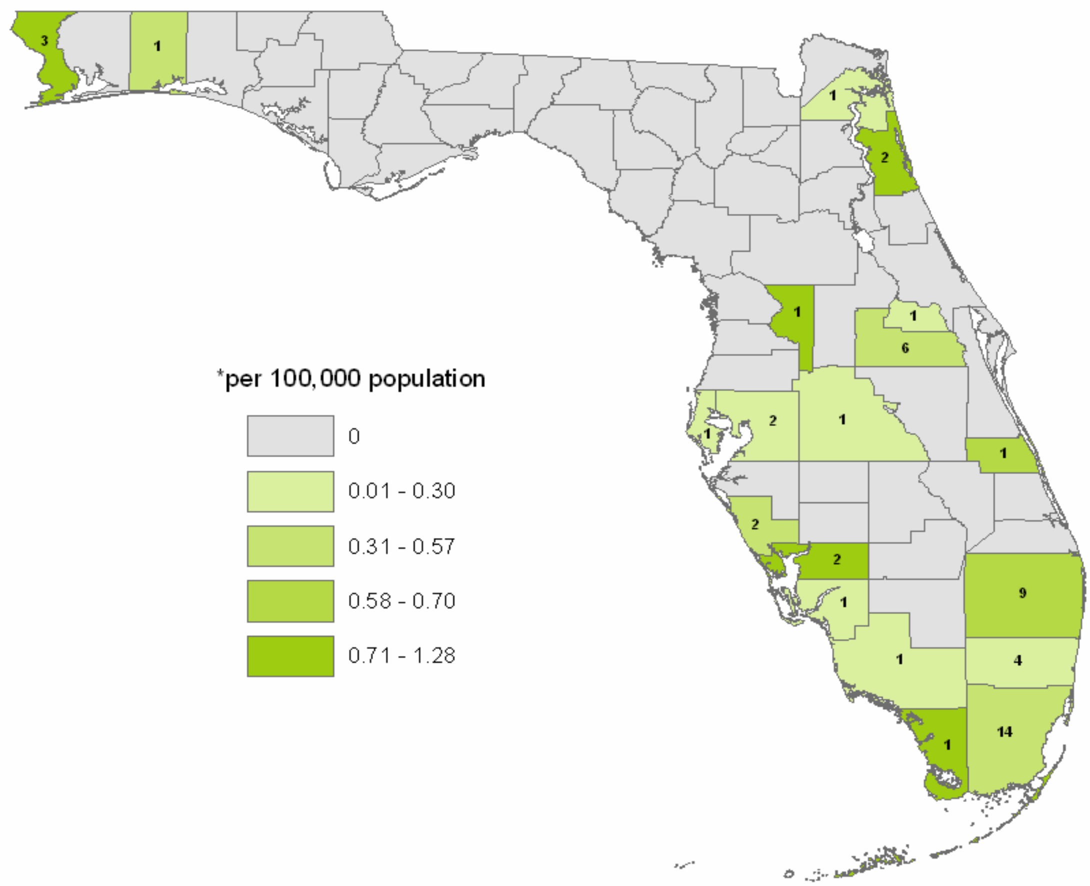
Figure 3. Listeriosis Incidence Rate by Age Group, Florida, 2010



Newborns and the elderly are at increased risk of disease (Figure 3). In 2010, the incidence rate was higher than the previous five-year average for newborns and lower in those aged >65 years. The incidence rate in males was similar to that in females (0.27 and 0.30 per 100,000 population, respectively) for 2010, which is different than the historical pattern where there are more cases in females.

Listeriosis was reported in 19 of 67 counties in Florida (Figure 4).

Figure 4. Listeriosis Cases and Incidence Rates* by County, Florida 2010



Prevention

Generally, to prevent listeriosis:

- Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.
- Wash raw vegetables before eating.
- Keep uncooked meats separate from vegetables, cooked foods, and ready-to-eat foods.
- Avoid unpasteurized milk or foods made from unpasteurized milk.
- Wash hands, knives, and cutting boards after handling uncooked foods.

Those at high risk for listeriosis (the elderly, pregnant women, those with cancer, HIV, diabetes, or weakened immune systems) should follow additional recommendations:

- Avoid soft cheeses such as feta, brie, camembert, blue-veined, and Mexican-style cheese.
- Cook leftover foods as well as ready-to-eat foods, such as hot dogs or cold cuts, until steaming hot before eating.

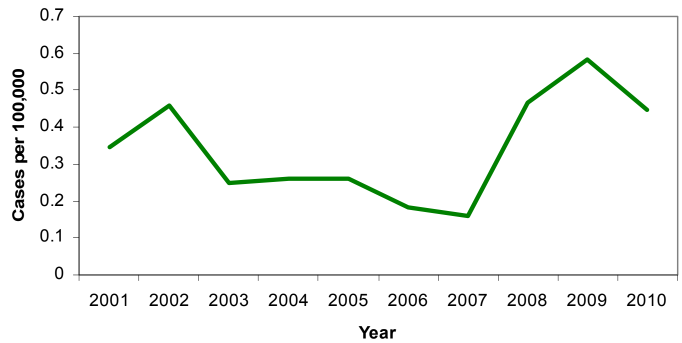
Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/ncidod/dbmd/diseaseinfo/listeriosis_g.htm.

Lyme Disease

Lyme Disease: Crude Data	
Number of Cases	84
2010 incidence rate per 100,000	0.5
% change from average 5 year (2005-2009) reported incidence rate	34.9%
Age (yrs)	
Mean	49.5
Median	53
Min-Max	3 - 89

Figure 1. Lyme Disease Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Lyme disease is caused by infection with *Borrelia burgdorferi* following the bite of an infected tick. After declines in the reported incidence of Lyme disease for most of the decade, there has been an overall increasing incidence since 2007, although incidence dropped slightly from 2009 to 2010 (Figure 1). In 2010, 84 imported and Florida-acquired cases were reported, which represented a 34.9% increase over the average incidence from 2005 to 2009. This may be partly attributed to a change in the case definition in 2008, as well as to a true increase in cases.

Sixty-seven percent of cases were classified as confirmed in 2010 and 33% as probable. Almost three-quarters of cases were acquired outside Florida, with 74% (62 cases) reported as imported. However, the proportion of Florida-acquired cases has increased in recent years from 13% (11 cases) reported in 2008, to 20% (22 cases) reported in 2009, to 26% (22 cases) reported in 2010. Exposures in the northeast and upper Midwest U.S., particularly New York, Massachusetts, Pennsylvania, New Jersey, Connecticut, and Wisconsin accounted for the largest number of cases. Highest case incidence was in the summer with peak incidence in July, but cases occurred year round (Figure 2). Winter is a period of decreased tick activity in most northern states. Thirty-seven percent of imported cases (23 cases) presented with early disease manifestations compared with 55% (12 cases) of Florida acquired cases. Eighty-six percent (12 cases) of all imported cases with early disease manifestations reported erythema migrans (EM), compared with 50% (6 cases) of those that were Florida-acquired.

Figure 2. Lyme Disease Cases by Month of Onset, Florida, 2010

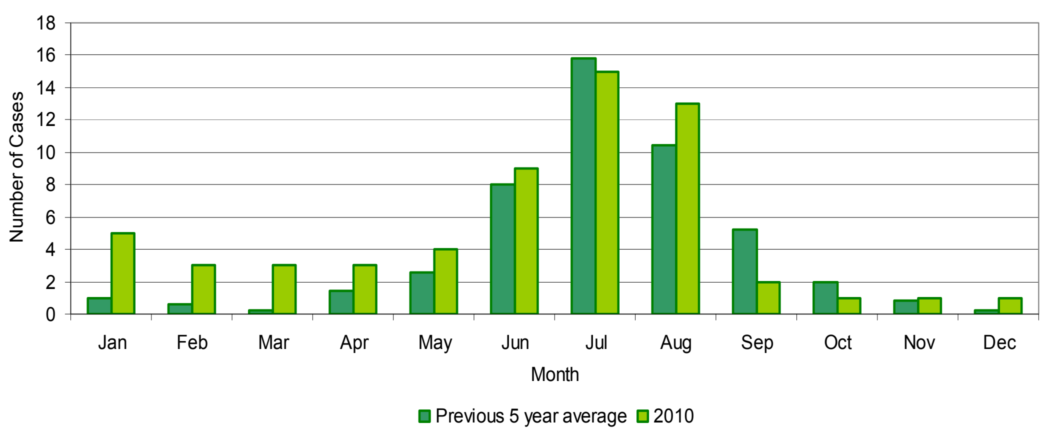
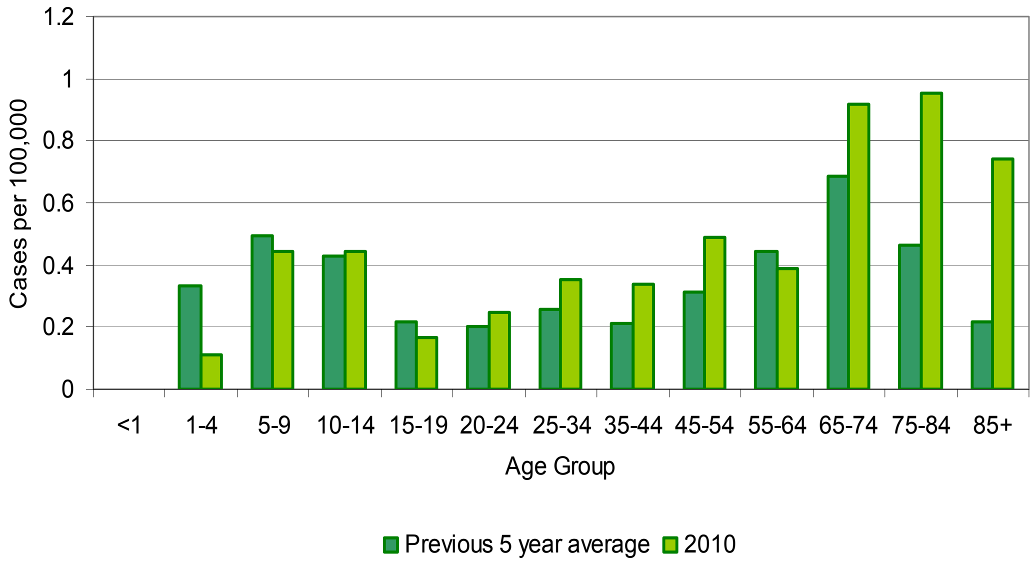
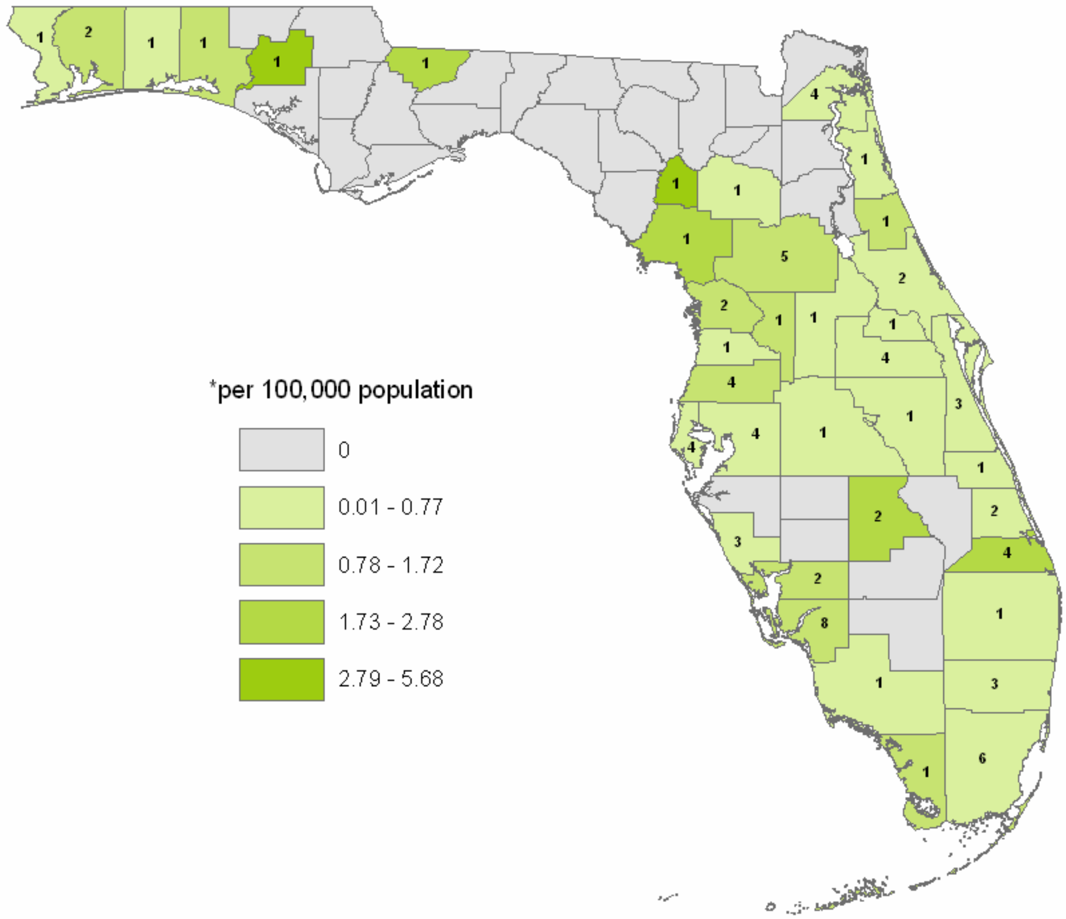


Figure 3. Lyme Disease Incidence Rate by Age Group, Florida, 2010



In 2010, the highest incidence of Lyme disease was in those aged >65 years. This general trend is consistent with the previous five-year average for age; however, the age groups primarily affected by Lyme disease tend to be older than the nationally reported peak incidence group of those aged 45-54 years. The median age for Florida-acquired cases is age 44 years, but it is age 52 years for non-Florida-acquired cases. One reason age may be higher for cases where illness was acquired outside the state is that more are identified later in the course of the disease, with 63% of imported cases demonstrating late manifestations compared to 45% of locally-acquired cases. The peak in children aged between five and 14 years is consistent with national trends (Figure 3). Women and girls represented 72% of Florida-acquired cases compared with 55% of imported cases. Lyme disease continues to be most frequently identified in whites (86%). Individuals of Hispanic ethnicity make up 7% of cases. Lyme disease was reported in residents of 38 Florida counties, but only 16 counties reported cases as acquired in Florida. Most Florida-acquired cases were reported in the north and central parts of the state (Figure 4).

Figure 4. Lyme Disease Cases and Incidence Rates* by County, Florida 2010



Prevention

The most effective prevention for individuals is to avoid human and pet exposure to ticks by using the following strategies:

- Avoid tick infested areas.
- Cover exposed skin as much as possible.
- Wear light-colored clothing to better see ticks.
- Tuck in pant legs and button sleeves.
- Apply permethrin to clothing and DEET to skin (per CDC recommendations).
- Inspect children, pets, and adults for ticks immediately following likely exposure.
- Use appropriate veterinary products as recommended by a veterinarian to prevent tick exposure to pets.
- Use landscaping measures around the home to reduce ground cover to reduce contact with ticks and use any type of fencing around a home.
- Bathe soon after being in tick habitats to decrease risk of infection in endemic areas.
- Promptly remove any ticks found attached to children, adults, or pets. Use fine tweezers or a tissue to protect fingers, grasp the tick close to the skin, and gently pull straight out without twisting. Do not use bare fingers to crush ticks. Wash hands following tick removal.

As most Florida cases are acquired in Lyme-endemic areas of the northeastern U.S., these prevention measures are especially important while visiting those areas.

References

L.K. Pickering, C.J. Baker, S.S. Long, and J.A. McMillan (eds.), *Red Book: 2009 Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics Press, 2009.

Connecticut Agricultural Experiment Station, 2007, Tick Management Handbook, Bulletin 1010, at: http://www.cdc.gov/ncidod/dvbid/lyme/resources/handbook.pdf.

Additional Resources

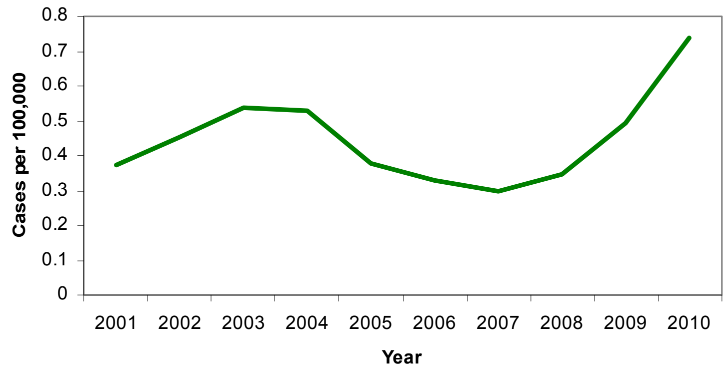
Disease information is available from the Centers for Disease Control and Prevention at: http://www.cdc.gov/ncidod/dvbid/lyme/ and http://www.cdc.gov/healthypets/diseases/lyme.htm.

Disease information is available from the Florida Department of Health at: http://myfloridaeh.com/medicine/arboviral/Tick_Borne_Diseases/Tick_Index.htm.

Malaria

Malaria: Crude Data	
Number of Cases	139
2010 incidence rate per 100,000	0.7
% change from average 5 year (2005-2009) reported incidence rate	100.3%
Age (yrs)	
Mean	42.5
Median	44
Min-Max	6 - 78

Figure 1. Malaria Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Human malaria is caused by five species of protozoan parasites of the genus *Plasmodium: P. vivax, P. falciparum, P. malariae, P. ovale* and *P. knowlesi*. All except *P. knowlesi* are transmitted from people to people via the bite and blood-feeding behavior of mosquitos of the genus *Anopheles*. Non-human primates act as the reservoir for *P. knowlesi*. Malaria was endemic in Florida up until the 1940s. Currently, nearly all cases are travelers returning to the state from malaria endemic regions of the world, though competent vectors do exist in the state, providing the potential for local transmission. The incidence rate for malaria in Florida declined for several years (Figure 1) until 2008; 139 cases were reported in Florida residents in 2010. In 2010, the number of cases more than doubled as compared to the average incidence from 2005 to 2009. Of the 139 cases reported in 2010, four had onset dates in 2009. An additional two cases reported in 2011 had onset dates in 2010 bringing the total of cases with onset dates in 2010 to 137 cases.

More cases are reported during the summer and early fall months, which correlates with the rainy season in source countries such as Haiti, as well as the summer travel season for Florida residents, but cases in Florida are reported year-round (Figure 2). High incidence rates have been consistent among those in the 20 to 34 age group, and this trend persisted during 2010 (Figure 3). The mean age of reported malaria cases in Florida is 44 years (range: 6-78). For 136 cases with onset dates in 2010, 114 (84%) were diagnosed with *P. falciparum,* 16 (12%) with *P. vivax*, 2 (1%) with *P. ovale*, 1 with *P. malariae* (<1%), and 3 (2%) with undetermined species. Eighty-one percent of cases were non-white and 60% were male.

Figure 2. Malaria Cases by Month of Onset, Florida, 2010

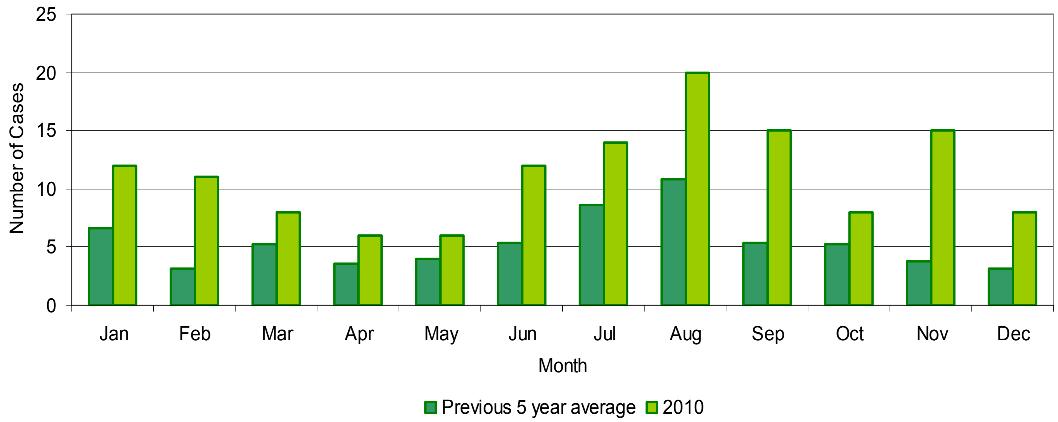
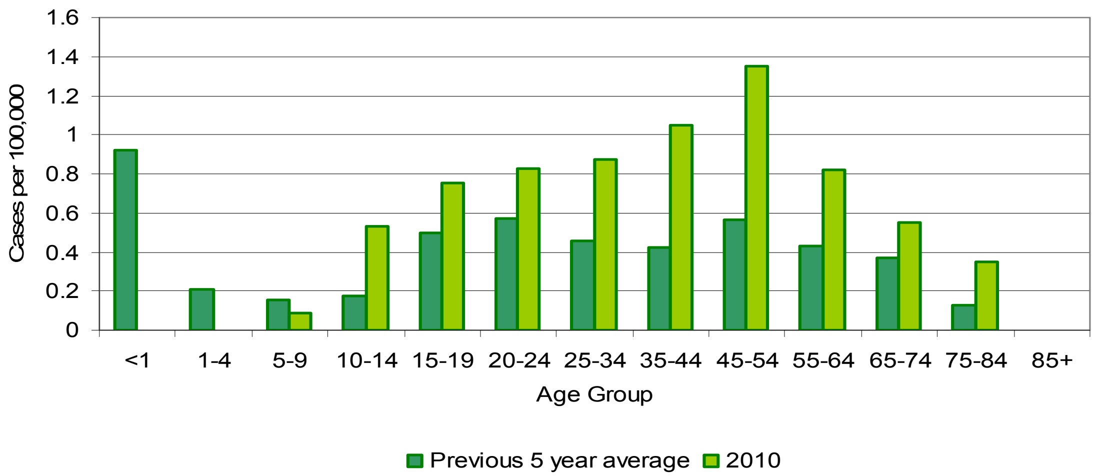


Figure 3. Malaria Incidence Rate by Age Group, Florida, 2010



One case of *P. falciparum* malaria with cryptic origin (suspected to be Florida-acquired) was reported in Duval County during November 2010. The ill person had extensive U.S. travel but had not recently been in any airports that provided direct flights to malaria endemic countries. Sixty percent of cases with onset in 2010 were in people who had recent travel history to Caribbean countries (Haiti, Dominican Republic and Jamaica), 26% traveled to Africa, 9% to Asia, 3% to South America, and 2% to Central America. Of those for whom additional data were available (84 out of 136 total cases with onset in 2010), the largest proportion (62%) acquired malaria while visiting relatives or friends. Persons "visiting friends and relatives" or VFRs are considered a high-risk group since any prior immunity may have waned and they tend not to take proper malaria prevention precautions. Other reasons for travel to malaria endemic areas were missionary/volunteer work (11%), tourism (7%), and business (10%). Immigrants to Florida made up 10% of the cases. Eighty-six percent of cases reported not using anti-malarial chemoprophylaxis, 6% reported missing doses, and 8% reported taking all doses as scheduled.

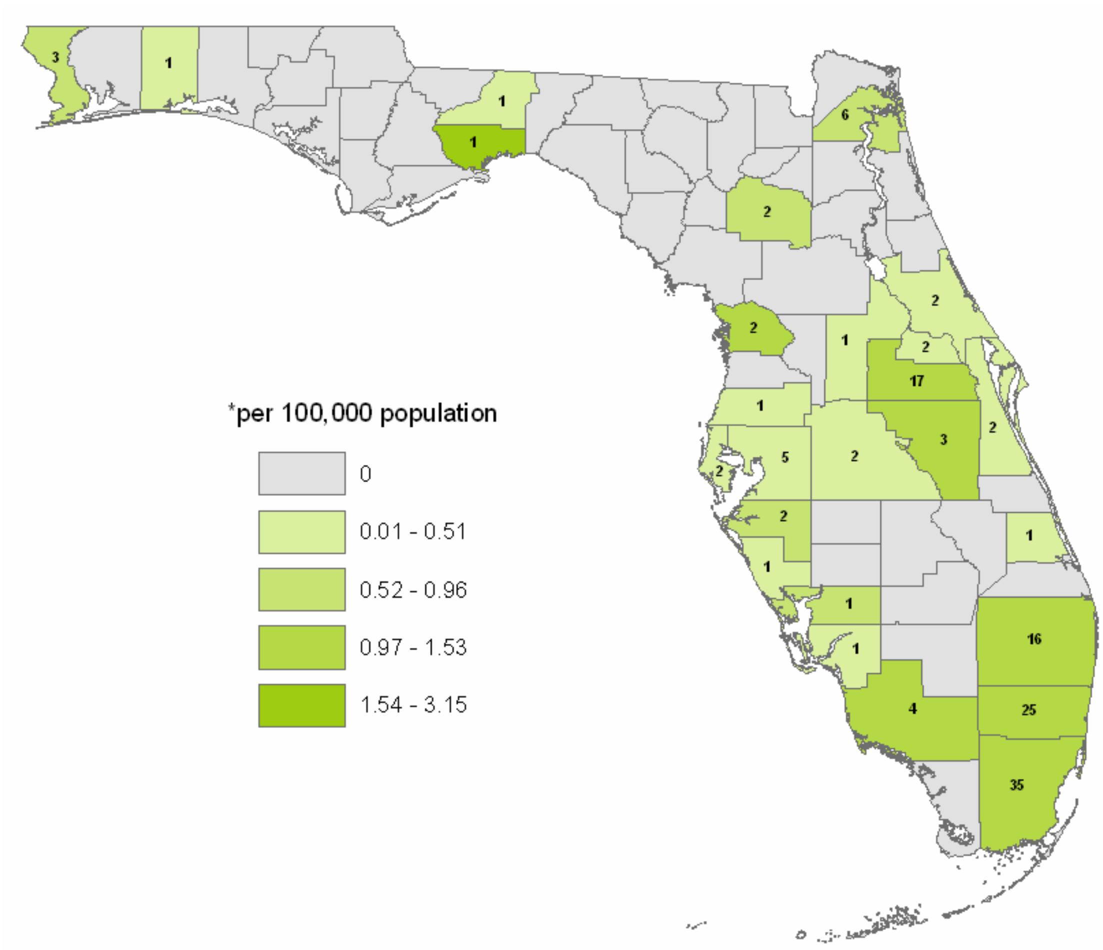
Prevention

No vaccine is currently available. Travelers to malaria-endemic countries should consult with their doctors to make sure they receive an appropriate preventative chemoprophylactic regimen and should also take the full course of chemoprophylaxis as prescribed. A number of factors should be taken into consideration prior to prescribing chemoprophylaxis including: risk, the species of malaria present, drug resistance, and how well the drug is tolerated.

Following these personal protection measures can also help prevent malaria infection:

- Avoid contact with mosquitoes by using an insect repellent containing DEET or other EPA-approved ingredient.
- Remain in well-screened areas.
- Keep skin covered in clothing.
- Use insecticide-treated bed nets.

Malaria Cases and Incidence Rates* by County, Florida 2010



References

Centers for Disease Control and Prevention, "Traveler's Health: Yellow Book, Health Information for International Travel, 2010," June 22 2009, http://wwwn.cdc.gov/travel/contentYellowBook.aspx.

Additional Resources

A table containing drugs used in malaria prophylaxis can be found in the CDC Yellow Book, online at: http://wwwn.cdc.gov/travel/yellowBookCh4-Malaria.aspx#404.

Additional information on malaria and other mosquito-borne diseases can be found in the Surveillance and Control of Arthropod-borne Diseases in Florida Guidebook, online at: http://www.doh.state.fl.us/environment/medicine/arboviral/pdf_files/2009MosquitoGuide.pdf.

Malaria fact sheets for immigrants are available at: http://www.doh.state.fl.us/Environment/medicine/arboviral/Malaria.html.

Measles

Disease Abstract

In 2010, one laboratory-confirmed case of measles was reported, for a statewide incidence rate of 0.01 cases per 100,000 population. The person with measles, a resident of Florida, reported travel throughout two European countries approximately three weeks prior to symptom onset. The person's vaccination history was unknown, though immunity to mumps and varicella was reported. The person was born before 1957 and reported living abroad until 1960. This case was classified as internationally imported given the exposure was outside the country, with rash onset within 21 days after entering the U.S., and the case was not linked to local transmission. Countries in Europe have experienced increases in measles activity over the past several years, with several countries being classified as measles endemic. Measles vaccination rates have recently fallen in many of those countries, partly due to unfounded concerns about vaccine safety.

Measles is a disease of urgent public health importance. Each case requires tracking all contacts and conducting interviews to assess susceptibility and focus the public health response. Florida has many possible sources of infection due to the many foreign visitors each year, the ease of international travel, and the increasing incidence of measles in the U.S. and abroad. When a case is identified in another state or country, all possible contacts in Florida are tracked in order to identify other potential cases and prevent continued transmission.

Prevention

Vaccination against measles is recommended for all children after their first birthday. Two doses of measles vaccine (preferably as MMR) are required for entry and attendance in kindergarten through twelfth grade. All children attending or entering childcare facilities or family daycare must be age-appropriately vaccinated with one or two doses of measles vaccine. At least one dose of MMR vaccine is recommended for adults born during or after 1957.

References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 4th ed., 2008, Chapter 7.

Muscat M, "Who Gets Measles in Europe?," *Journal of Infectious Diseases,* 2011 Jul; 204 Suppl 1:S353-65.

Additional Resources

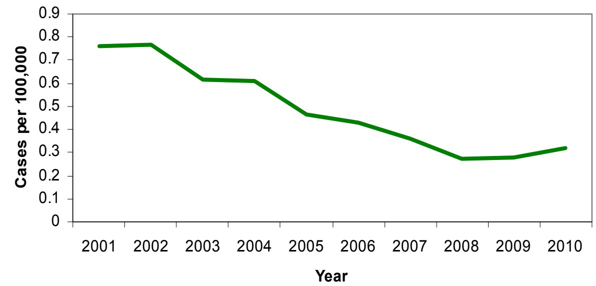
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: www.cdc.gov/vaccines/vpd-vac/measles/default.htm.

Recommended immunization schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm.

Meningococcal Disease

Meningococcal Disease: Crude Data	
Number of Cases	60
2010 incidence rate per 100,000	0.3
% change from average 5 year (2005-2009) reported incidence rate	-11.3%
Age (yrs)	
Mean	37.0
Median	30
Min-Max	0 - 88

Figure 1. Meningococcal Disease Incidence Rate by Year Reported, Florida 2001-2010



Disease Abstract

Meningococcal disease includes both meningitis and septicemia due to the bacteria *Neisseria meningitidis*. There are many different serogroups of *Neisseria meningitidis*. The common ones in the United States include A, B, C, W-135, and Y. The reported incidence rate for meningococcal disease has declined gradually over the previous 10 years, and in 2010 was less than half of what it was 10 years ago (Figure 1). The long-term downward trend has reversed in 2009 and 2010, mostly because of an increase in W-135 infections in South Florida. In 2010, 60 cases were reported, of which 59 were confirmed. There is a general seasonal increase in cases in late winter and early spring (Figure 2). There were 16 cases related to a PFGE laboratory-confirmed cluster of serogroup W-135 in southeast Florida that had been previously reported (additional information is available in the article cited in the references section.) Ten cases resulted in death.

Figure 2. Meningococcal Disease Cases by Month of Onset, Florida, 2010

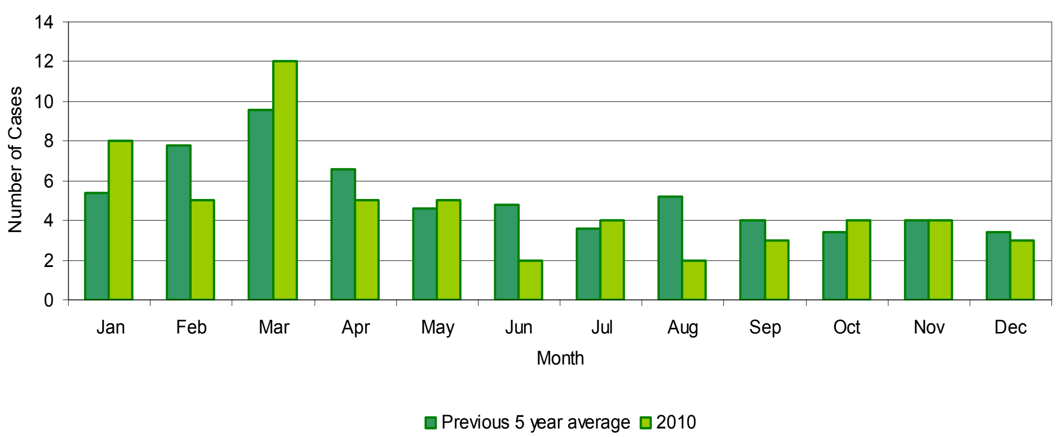
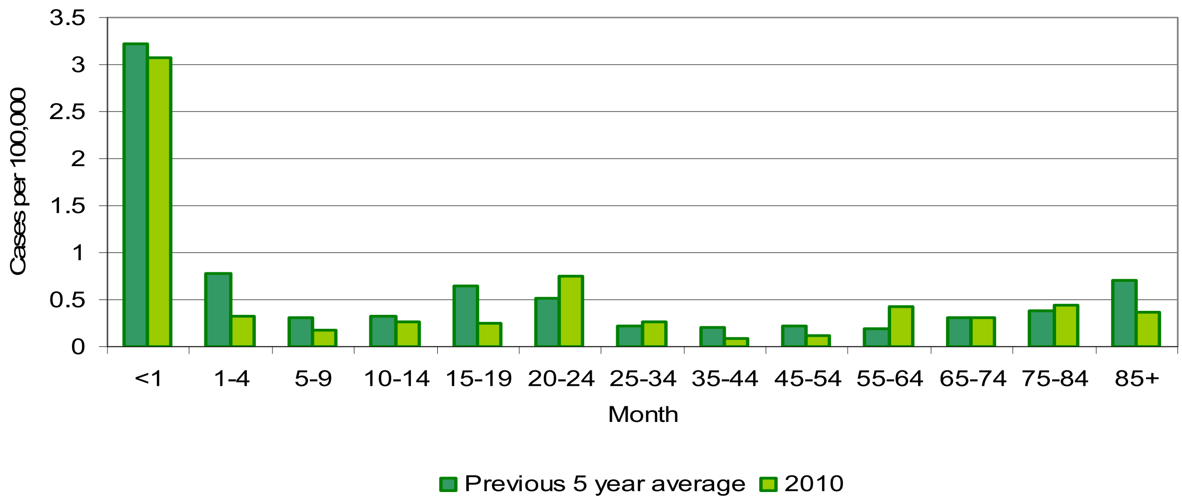


Figure 3. Meningococcal Disease Incidence Rate by Age Group, Florida, 2010



The highest incidence rates continue to occur in infants aged <1 year. As of October 2010, vaccination recommendations have been updated to include recommended meningococcal vaccination using the conjugate vaccine starting at age two for individuals with medical risk factors. Additionally, the polysaccharide vaccine has been recommended for use in children aged three months to two years under special circumstances such as impending travel to an endemic area. In 2010, the incidence rates were lower than or equal to the previous five-year average in all age groups except those aged 20-24 years, 55-64 years, and those aged 75-84 years (Figure 3). Fifty-eight of the 60 cases had specimens submitted to the Bureau of Laboratories for serogrouping (Table 1).

Meningococcal disease was reported in 21 of 67 counties in Florida (Figure 4). Counties in central and southeastern Florida reported the highest incidence rates.

Figure 4. Meningococcal Disease Cases and Incidence Rates* by County, Florida 2010

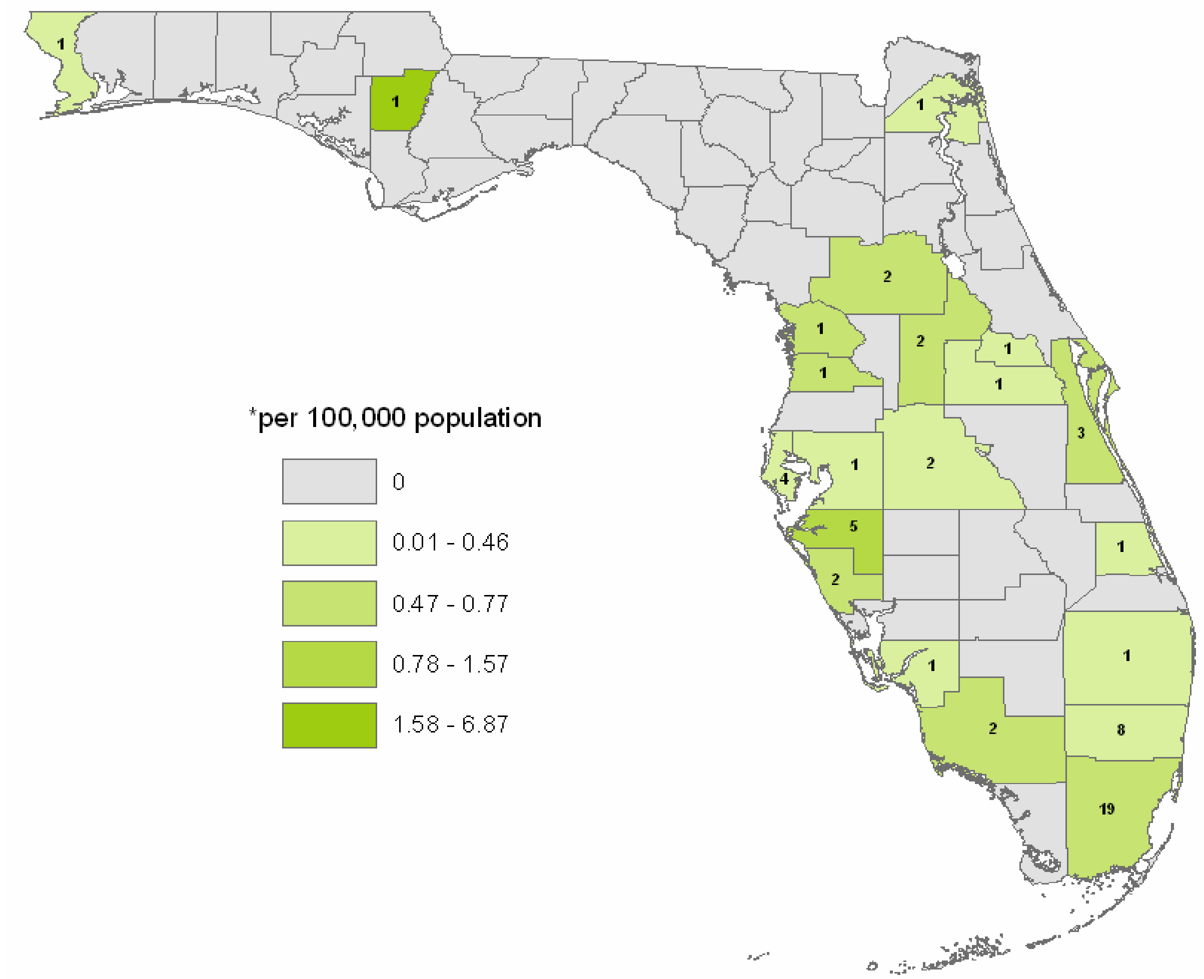


Table 1. Cases of Meningococcal Disease by Serogroup, Florida, 2010

Serogroup	Number of Cases
Group A	0
Group B	14
Group C	8
Group Y	15
Group W-135	19
Non-Groupable	1
Other	1
Isolate not submitted for serogrouping	2
Total	60

Prevention

Meningococcal vaccines are available to reduce the likelihood of contracting *Neisseria meningitidis*. Two vaccines, licensed in 1978 and 2005, provide protection against four serogroups (A, C, Y, and W-135). Droplet precautions should be implemented if the individual is hospitalized. Anyone who has close contact with an infected person's respiratory or oral secretions (i.e., kissing, sharing utensils or drinks, exposure to respiratory secretions during healthcare or resuscitation) or extended close household or social contact should receive antibiotic prophylaxis with an approved regimen (ciprofloxacin and rifampin are used most often).

Please see "Section 4: Summary of Antimicrobial Resistance Surveillance" for additional information on MeningNet, an enhanced meningococcal surveillance system used to monitor antimicrobial susceptibility.

References

American Academy of Pediatrics, *Red Book 2009: Report of the Committee on Infectious Diseases,* 28th ed., American Academy of Pediatrics Press, Elk Grove Village, Illinois, 2009.

Centers for Disease Control and Prevention, "Prevention and Control of Meningococcal Disease," *MMWR*, Vol. 54, No. RR07, 2005, pp.1-21.

Centers for Disease Control and Prevention, "Meningococcal Disease and College Students: Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *MMWR*, Vol. 49, No. RR-7, 2000, pp. 11-20.

Doyle TJ, Mejia-Echeverry A, Fiorella P, Leguen F, Livengood J, Kay R, et al, "Cluster of Serogroup W135 Meningococci, Southeastern Florida, 2008–2009," *Emerg Infect Dis*., 2010 Jan, available at: http://www.cdc.gov/EID/content/16/1/113.htm.

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) website at: http://www.cdc.gov/ncidod/dbmd/diseaseinfo/meningococcal_g.htm and http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/mening.pdf.

Mercury Poisoning

Disease Abstract

Mercury is a naturally occurring element. Its distribution in the environment is the result of both natural and man-made processes. There are three categories of mercury, each with unique characteristics and unique potential health effects: elemental mercury, organic mercury compounds, and inorganic mercury compounds. The organic mercury compound methyl mercury is the most likely to cause adverse health effects in the general population.

Common sources of mercury include:

- Elemental or metallic mercury – Broken mercury thermometers, blood pressure monitors, fluorescent light bulbs, dental amalgam, neon signs, outdoor lighting, cameras, electrical switches, batteries, and some folk medicines.
- Organic mercury compounds – Certain freshwater and saltwater fish, and marine mammals. Ethyl mercury and methyl mercury are used medically as fungicides and antibacterials.
- Inorganic mercury compounds – Sometimes used in skin lightening creams and as antiseptic creams and ointments, as well as in folk medicines. Used in preserving solutions for biological specimens. Used as a reagent in analytical chemistry reactions, photography, and metal etching solutions.

Mercury poisoning is diagnosed by laboratory testing. Elevated levels of mercury are defined as >10 micrograms per liter (µg/L) of urine, >10 micrograms per liter (µg/L) of whole blood, or >5 micrograms per gram (µg/g) of hair. However, urine mercury levels are not useful in evaluating suspected organic mercury poisoning.

There were 12 confirmed cases of mercury poisoning reported in Merlin during 2010. However, there were 13 cases where the exposure incident occurred during 2010. All 13 cases with their exposure incident occurring during 2010 will be included in the following analysis. The primary potential source of mercury exposure was identified to be fish consumption. Twelve out of thirteen cases had eaten fish within a month of reporting, while one patient had an unknown source of exposure. Three of the affected people reported eating less than 12 ounces of fish in a week; six cases reported eating 12 to 30 ounces, and two cases ate 30 to 60 ounces per week. Two cases did not report the amount of fish consumed.

For 2010, a majority of the confirmed cases were reported from Miami-Dade (N=7, 53.8%) and Pinellas (N=2, 15.4%) counties. Other counties that reported one case are Brevard, Broward, Hillsborough, and Leon. Cases were predominantly male (N=9, 69.2%). The majority of mercury poisoning cases were reported among those aged 35 to 64 years (N=11, 84.9%). Cases ranged from age 4 to 64 years; the mean and median age was 46.3 and 48 years respectively.

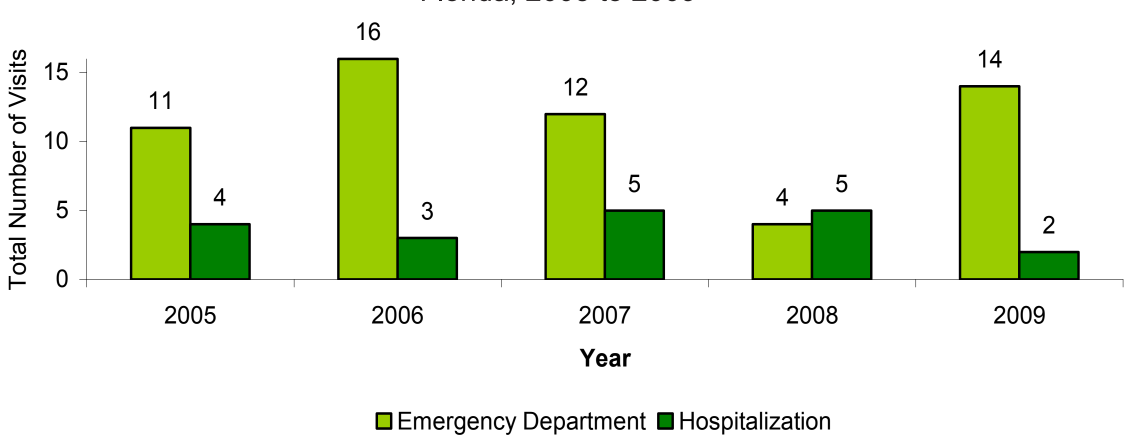
Approximately 62% (N=8) of the reported cases of mercury poisoning were among whites (both Hispanic and non-Hispanic), while 31% (N=4) reported unknown race and ethnicity. Among cases with known race and ethnicity, 15.4% were Hispanic (N=2).

Analysis of Varied Data Sources for Mercury Poisoning Events 2005 – 2009

In order to better estimate the burden of mercury-related poisonings, de-identified hospitalization and emergency department (ED) visit data from the Agency for Healthcare Administration, and mortality data from the Office of Vital Statistics were searched for mercury-related poisonings using relevant International Classification of Disease (ICD) codes. Selected codes were 985.0, E866.1 for ED visits and hospital admissions, and T56.1 for deaths. The data were extracted for one or more ICD codes present in the primary or secondary diagnosis fields from years 2005 through 2009 (the most recent year for which data was available).

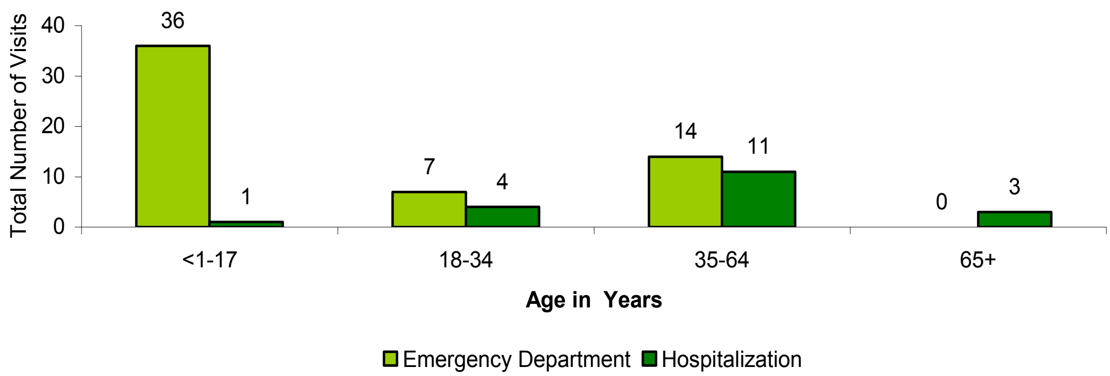
There were a total of 57 ED visits and 19 hospitalizations related to mercury poisoning reported from 2005 through 2009 in Florida. No mercury-related deaths were recorded during this time. Due to lack of personal identifiers in the hospitalization data, reports identified in ED visit and hospitalization data were not matched with cases identified in Merlin data and are not unduplicated.

Figure 1. Emergency Department Visits and Hospitalizations for Mercury Poisoning by Year, Florida, 2005 to 2009



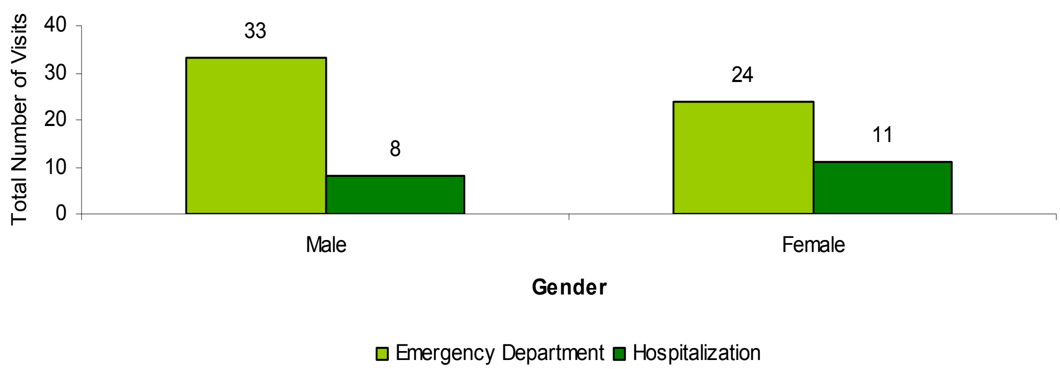
ED visits were predominantly among young people aged <17 years old (N=36, 63.2%), whereas hospitalizations were predominantly among adults aged >35 years (N=14, 3.7%).

Figure 2. Emergency Department Visits and Hospitalizations for Mercury Poisoning by Age Group, Florida, 2005 to 2009



Males made up a larger proportion of the ED visits (N=33, 57.9%), whereas females made up a larger proportion of the hospitalizations (N=11, 57.9%).

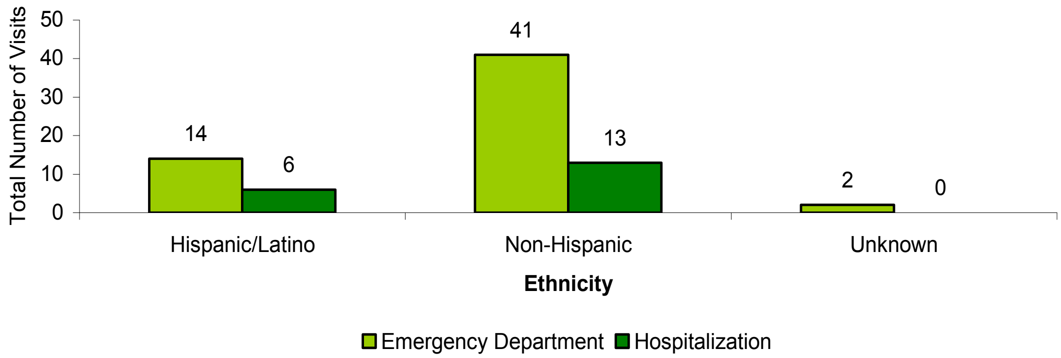
Figure 3. Emergency Department Visits and Hospitalizations for Mercury Poisoning by Gender, Florida, 2005 to 2009



Patients were primarily white (86% among ED visits, 89.5% among hospitalizations), with only six visits of any kind among Black/African Americans. Three patients were recorded as unknown race. Approximately 26% of the visits or hospitalizations reported Hispanic ethnicity.

Neither the source of mercury related to the poisoning nor the type of mercury (elemental versus organic) is available in the hospital ED or inpatient records, but it is not presumed to be primarily related to fish consumption. Given the young age of those presenting at the ED, there may be more cases related to exposure to elemental forms of mercury such as broken devices or through other exposure routes such as fungicides or home remedies, although the data are not available to explore these concerns.

Figure 4. Emergency Department Visits and Hospitalizations for Mercury Poisoning by Ethinicity, Florida, 2005 to 2009



Prevention

The Florida Department of Health provides health advisories related to fish consumption in Florida. The Florida Commercial Fish Wallet Card for Women of Child-Bearing Age has been developed to educate all consumers about mercury levels found in fish commonly available in Florida (both commercial and recreational fish species) and their safe consumption levels during pregnancy.

The Division of Environmental Health has created a brochure and one page fact sheet about mercury to educate Floridians about risk and prevention of mercury exposure.

Additional Resources

For more information about the Chemical Disease Surveillance Program please visit the website at: http://www.myfloridaeh.com/medicine/Mercury_Poisoning.html.

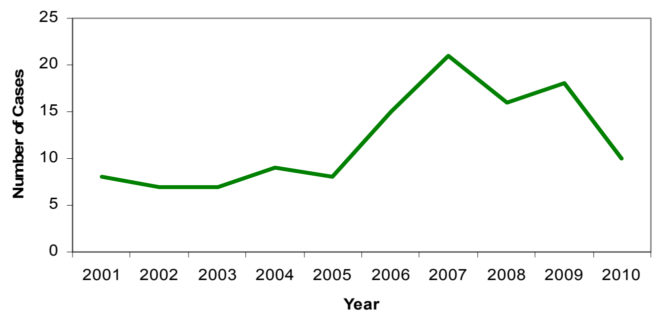
Florida Fish Consumption Advisories are posted at: http://www.doh.state.fl.us/floridafishadvice/.

“Don’t Mess with Mercury” videos (English and Spanish versions) are available at: http://www.dontmesswithmercury.org/.

Mumps

Mumps: Crude Data	
Number of Cases	10
2010 incidence rate per 100,000	0.05
% change from average 5 year (2005-2009) reported cases	-35.9%
Age (yrs)	
Mean	21.1
Median	17.5
Min-Max	4 - 52

Figure 1. Mumps Cases by Year Reported, Florida, 2001-2010

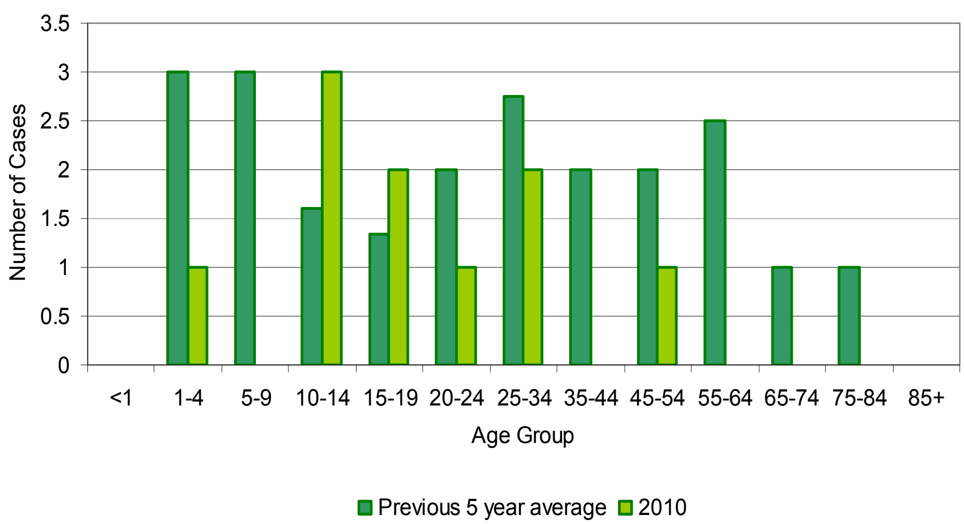


Disease Abstract

The 2010 statewide incidence rate for mumps was 0.05 per 100,000 population. Cases in 2010 ranged from persons aged 4 to 52 years (Figure 2). Of the ten cases, eight were reported as confirmed and two as probable. One case was acquired outside of the U.S. and one was hospitalized. Five of the cases received mumps-containing vaccine, two had no history of vaccination, and three had unknown immunization status.

The 10 confirmed cases represent a decrease from 18 confirmed cases in 2009. Incidence of mumps was relatively unchanged from 2000 to 2005. However, in 2006, there was a significant increase in cases in the U.S., especially in the college-age population. The peak in Florida activity occurred in 2007 and has declined since, decreasing in 2010 to 35.9% below the previous five-year average. One case in the 10-14 year age group was a household contact of the case in the 1-4 year age group.

Figure 2. Mumps Cases by Month of Onset, Florida, 2010



Prevention

Vaccination with two doses of mumps containing vaccine is recommended. The first dose of MMR should be given at 12 months of age and the second dose between the ages four to six years (prior to kindergarten entry). Proof of MMR is required for entry and attendance in childcare facilities, family daycare homes, and kindergarten through twelfth grade. Many colleges in Florida also require mumps vaccination for entry. After the 2006 multi-state mumps outbreak in young adults, two doses of mumps vaccine are now recommended for all children and young adults up to age 24. Two doses of MMR vaccine also are recommended for students attending colleges and other post-high school institutions.

References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases*, 4th ed., 2010, Chapter 9.

Additional Resources

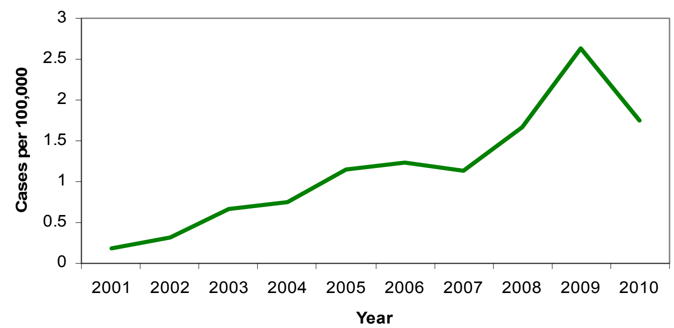
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/vaccines/vpd-vac/mumps/default.htm#clinical.

Recommended immunization schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm.

Pertussis

Pertussis: Crude Data	
Number of Cases	328
2010 incidence rate per 100,000	1.8
% change from average 5 year (2005-2009) reported incidence rate	11.5%
Age (yrs)	
Mean	18.0
Median	9
Min-Max	0 - 86

Figure 1. Pertussis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Pertussis is a severe respiratory disease caused by *Bordetella pertussis*. It is also known as whooping cough. Florida pertussis rates increased steadily from 2001 through 2009 and fell slightly in 2010 (Figure 1). Case numbers went from 30 cases in 2001 (22 confirmed and 8 probable) to a peak of 497 cases in 2009 (376 confirmed and 121 probable). There were 328 cases reported in 2010 (239 confirmed and 89 probable). In the previous five years and in 2010, most cases occurred during the summer months (Figure 2). In the previous years, pertussis cases were consistent between gender and race. However, in 2010, rates were higher in whites than in non-whites.

As in the previous five years, most pertussis cases were identified in infants and young children. Of the 328 reported cases in 2010, 100 were reported in infants aged <12 months, too young to have completed the vaccination series (Figure 3). Of the reported people with the disease, 77 were hospitalized, and acute encephalopathy was reported in three. Two deaths occurred in infants aged <12 months who had confirmed cases. There was no record of vaccination for 196 (59.8%) cases. Ninety-one (27.74%) cases in 13 counties were outbreak-associated. Cases in adolescents and adults are often not recognized, but can be sources of infection for young children.

Figure 2. Pertussis Cases by Month of Onset, Florida, 2010

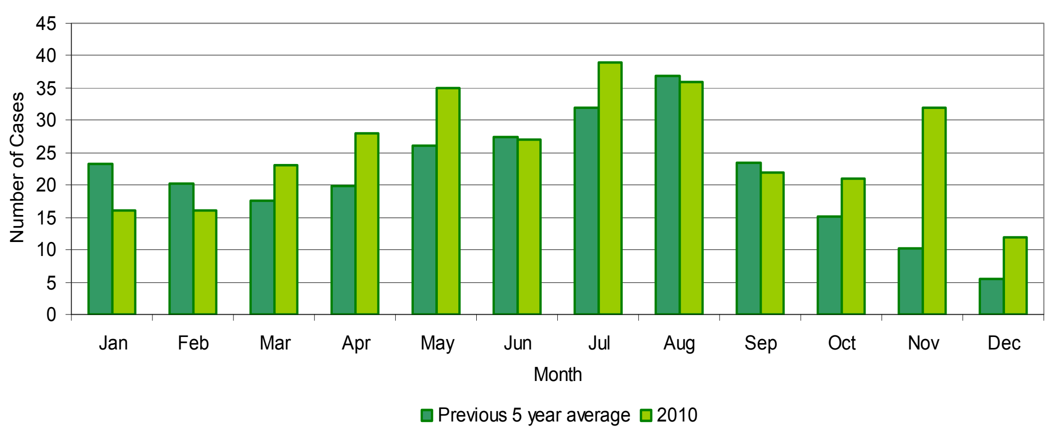
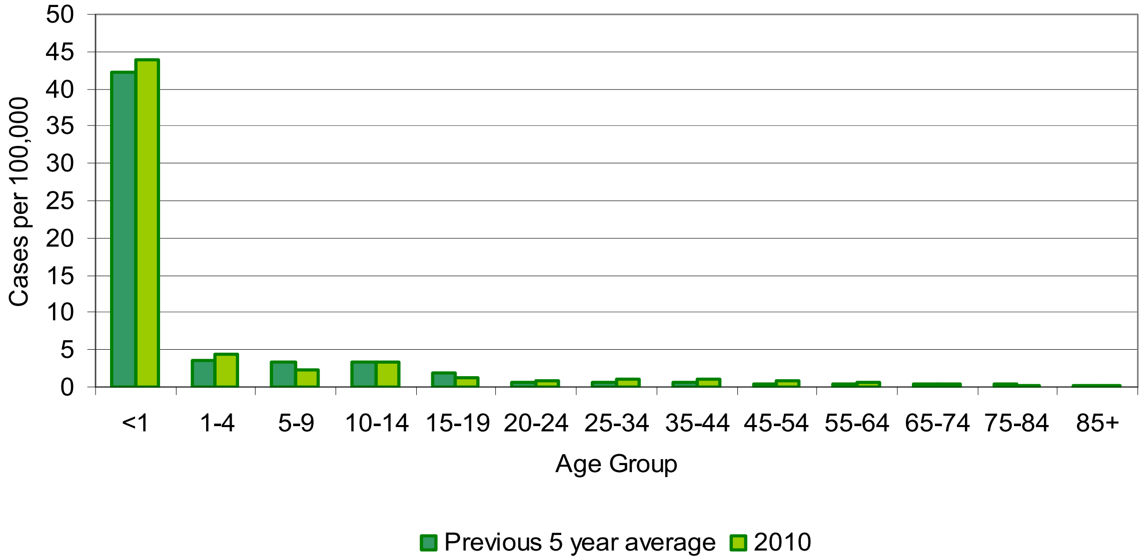
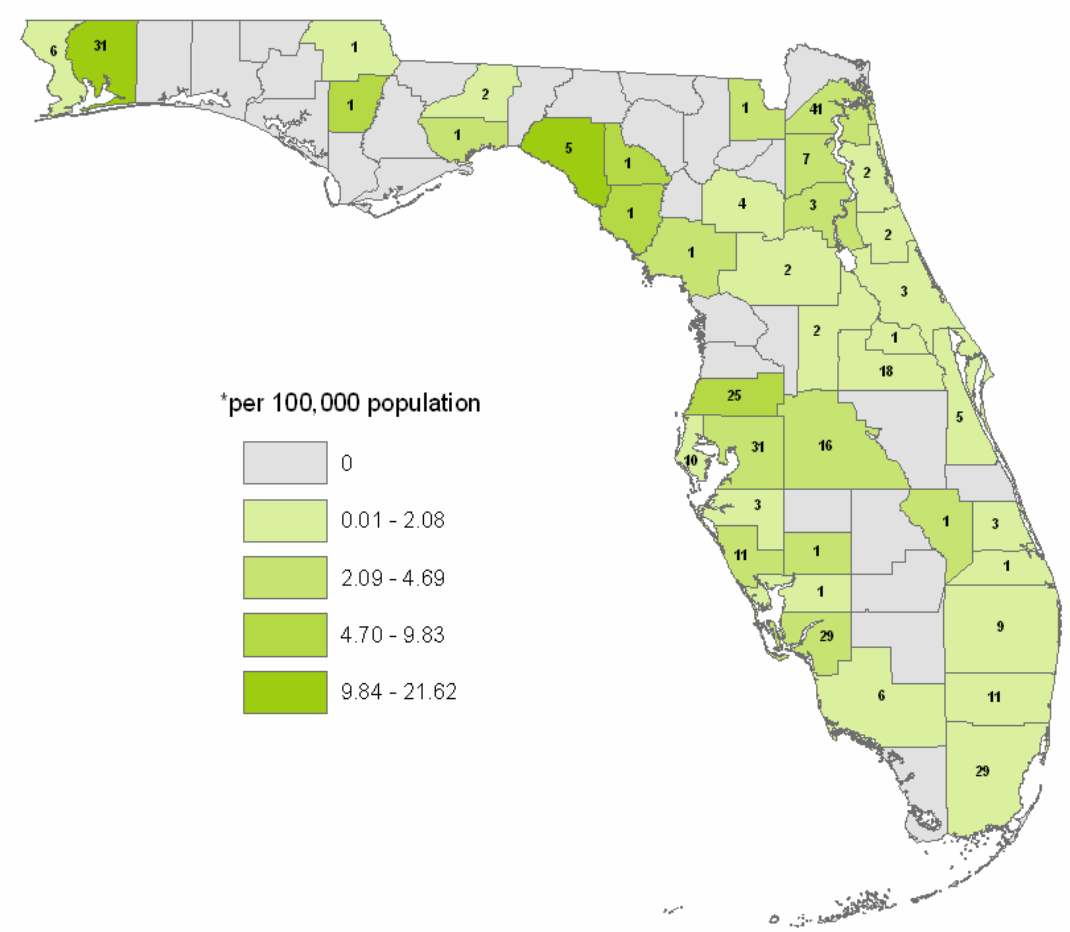


Figure 3. Pertussis Incidence Rate by Age Group, Florida, 2010



Pertussis was reported in 39 of 67 counties in Florida (Figure 4).

Figure 4. Pertussis Cases and Incidence Rates* by County, Florida 2010



Prevention

Currently, only acellular pertussis vaccines combined with diphtheria and tetanus toxoids (DTaP and Tdap) are available in the U.S. The five DTaP doses should be administered to children at ages two months, four months, six months, 15 to 18 months, and four to six years. This vaccine is also available in combination with other childhood vaccines. The increase in disease in the early teenage years indicates that immunity decreases over time. One dose of Tdap vaccine is now recommended to be given between age 10 and 64 years. As of school year 2009-2010, Tdap vaccine is required for children entering seventh grade. Post-exposure antibiotic and vaccine prophylaxis of close contacts of a case are the major outbreak control measures to prevent pertussis transmission.

References

Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases,* 4th ed., 2008, Chapter 10.

Centers for Disease Control and Prevention, *Guidelines for the Control of Pertussis Outbreaks*. Centers for Disease Control and Prevention: Atlanta, GA, 2000.

Centers for Disease Control and Prevention, Pertusis, 2010, website at: http://www.cdc.gov/vaccines/pubs/pertussis-guide/guide.htm.

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: www.cdc.gov/vaccines/vpd-vac/pertussis/default.htm.

Recommended immunization schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm.

Pesticide-Related Illness and Injury, 2009

Disease Abstract
The Department of Health (DOH) uses a standard protocol based on the National Institute of Occupational Safety and Health (NIOSH) surveillance guidelines for classifying cases. Only confirmed, probable and possible case classifications meet the reportable case criteria and are reported to the Sentinel Event Notification System for Occupational Risk (SENSOR) program. The case definition for pesticide-related illness and injury is available at http://www.doh.state.fl.us/disease_ctrl/epi/surv/CaseDefinitions/Pesticide-Related_Illness.pdf. Cases are reported to the Chemical Disease Surveillance Program (CDSP) from multiple sources including: electronic laboratory reports, the Florida Poison Information Center Network (FPCIN), emergency department (ED) chief complaint data, as well as self-reports from ill individuals, co-workers, family members, and others.

Recent incorporation of FPICN and ED chief complaint data into Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) has provided an additional tool for all trained county health department (CHD) users to access clinical pesticide poisoning reports.

Data on pesticide-related illness and injury are currently available through 2009. From 1998 through 2009, 2,944 cases of pesticide-related illness and injuries were reported to the CDSP; 430 were identified as work-related. The CDSP received 405 case reports of acute pesticide-related illness and injuries in 2009 (Figure 1). The increase in cases seen since 2006 is related to additional cases identified as a result of direct access to the FPICN by the CDSP which has led to more complete case ascertainment. Case distribution is not uniform throughout the year with more cases reported during summer months (Figure 2).

Figure 1. Number of Pesticide-Related Illness and Injury Cases by Year, Florida, 1998-2009

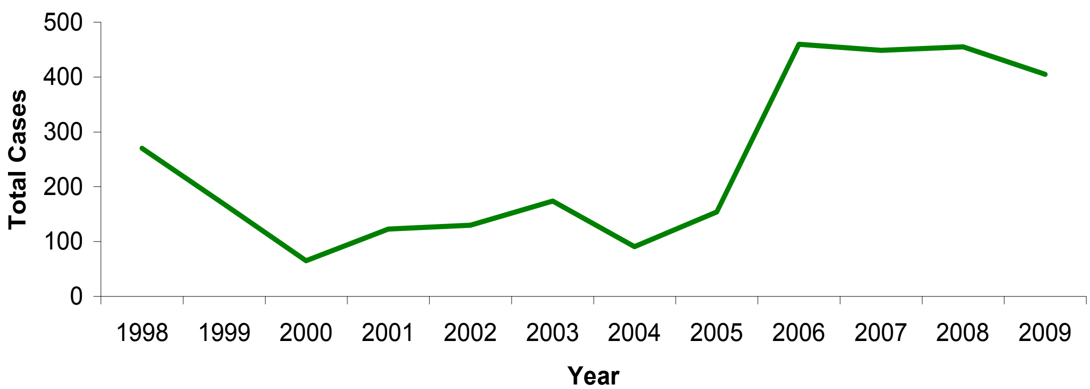
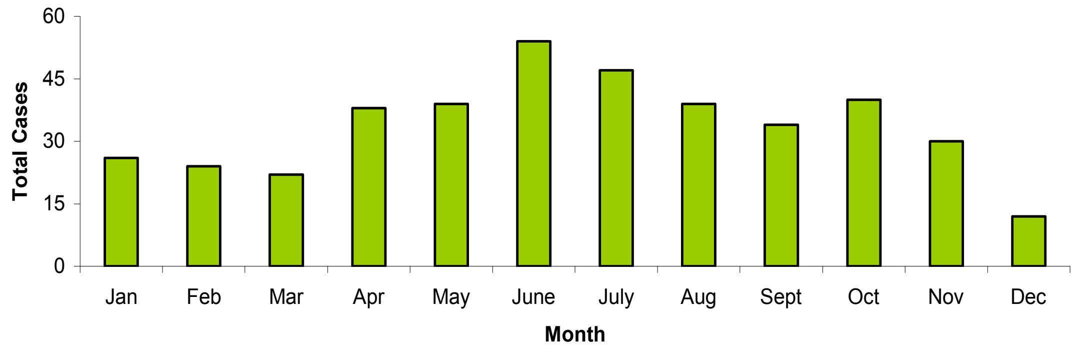
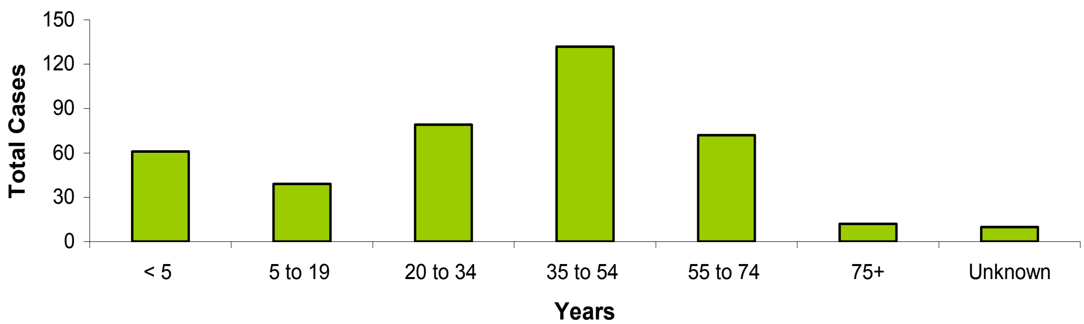


Figure 2. Pesticide Poisoning Cases by Month of Exposure, Florida, 2009



The majority of the cases during 2009 were classified as possible (N=277, 68.4%) followed by confirmed (N=78, 19.3%), and probable (N=50, 12.3%). The FPICN has become the major data reporting source since 2006. In 2009, 285 (70.4%) of cases were identified through the FPICN. Other common sources of reporting were self report (N=42, 10.4%), friends and relatives (N=35, 8.6%), physician and other health care providers (N=35, 8.6%), and co-worker (N=6, 1.5%). About 7.9% of cases were reported from more than one source (N=32). Cases ranged from less than two months of age to 95 years, with 36.3 and 38 as the mean and median ages respectively. The majority of cases were aged 35 to 54 years (N=132, 32.6%) (Figure 3). There were slightly more females reported with pesticide poisoning (53.3%) than males.

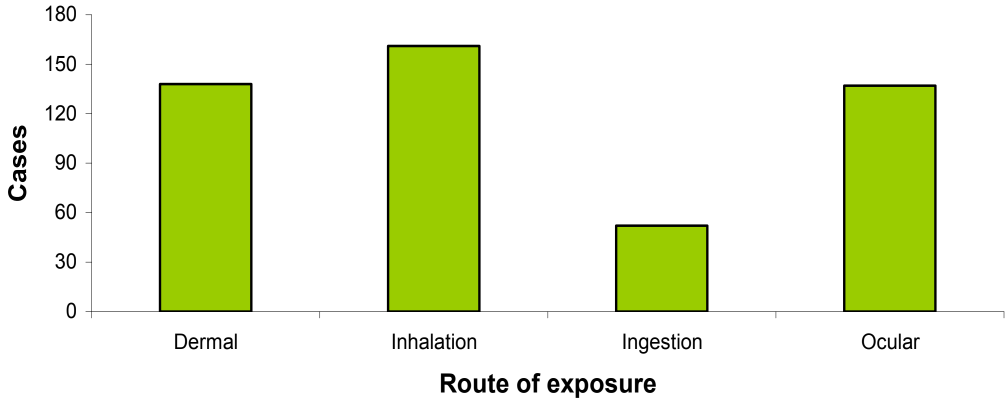
Figure 3. Pesticide-Related Illness and Injury Cases by Age Group, Florida, 2009



To meet the disease reporting criteria for pesticide-related illness and injury, patients must report two or more acute pesticide-related health effects. The majority of patients reported ocular (N=152, 37.5%), respiratory (N=126, 31.1%), gastrointestinal (N=115, 28.4%), dermal (N=104, 25.7%), and neurological (N=90, 22.2%) health effects during 2009. Other health effects reported were general (N=47, 11.6%) and craniological (N=37, 9.1%). Most cases reported were considered to have experienced low severity of illness (N=340, 84%) followed by moderate (N=54, 13.3%) and high (N=11, 2.7%) severity of illness. No deaths were reported to the chemical disease surveillance program related to pesticides during 2009. Race and ethnicity was not collected for the cases reported during 2009.

During 2009, inhalation (n=161), followed by dermal (n=138), and ocular (n=137) were the most frequent routes of pesticide exposures (Figure 4).

Figure 4. Pesticide-Related Illness and Injury Cases by Route of Exposure, Florida, 2009



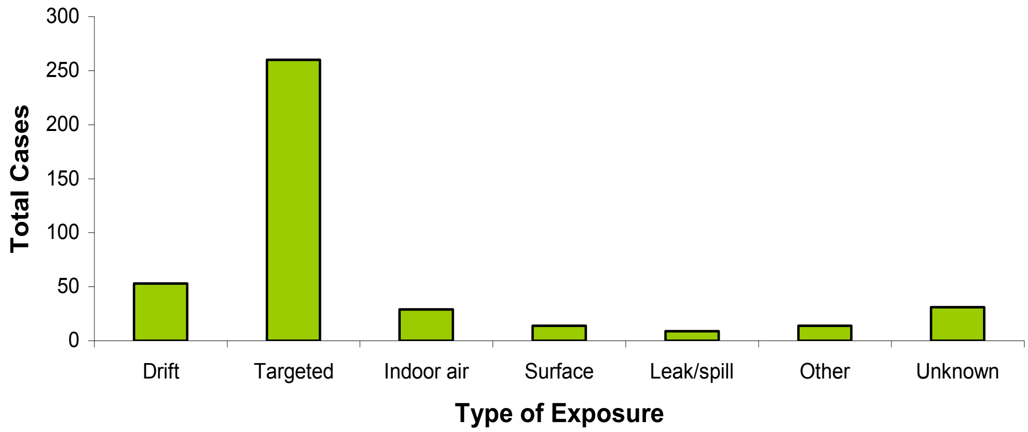
Most of the cases during 2009 occurred in the home (N=310, 76.5%). Other sites of exposure reported include farms, forests, schools, private vehicles and service establishments. About 17.8% of cases had an unknown site of exposure (N=72). The majority of cases reported that they were applying pesticides at the time of exposure (Table 1).

Table 1. Activity at the Time of Pesticide Exposure for Pesticide-Related Illness and Injury Cases, Florida, 2009

Activity at the time of exposure	Count	%
Direct pesticide contact activities		
Applying pesticides	175	43.2
Mixing or loading pesticides	1	0.2
Transport or disposal of pesticides	3	0.7
Any combination of above three	7	1.7
Non-direct pesticide contact activities		
Emergency response	5	1.2
Routine work/not application	9	2.2
Routine indoor living	48	11.9
Routine outdoor living	20	4.9
Not applicable	69	17.0
Unknown	68	16.8
Total	**405**	**100.00**

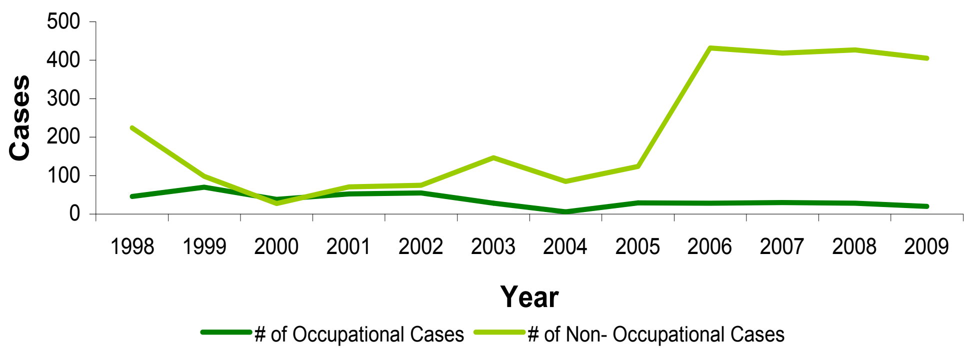
Applications of a pesticide material released at the intended location (target site) and not carried from that location to another area by air are considered to be targeted applications. Pesticide exposure occurred during targeted application for 260 cases in 2009 (64.2%) (Figure 5). Pesticide drift accounted for only 13.1% of all cases.

Figure 5. Pesticide-Related Illness and Injury Cases by Type of Exposure, Florida, 2009



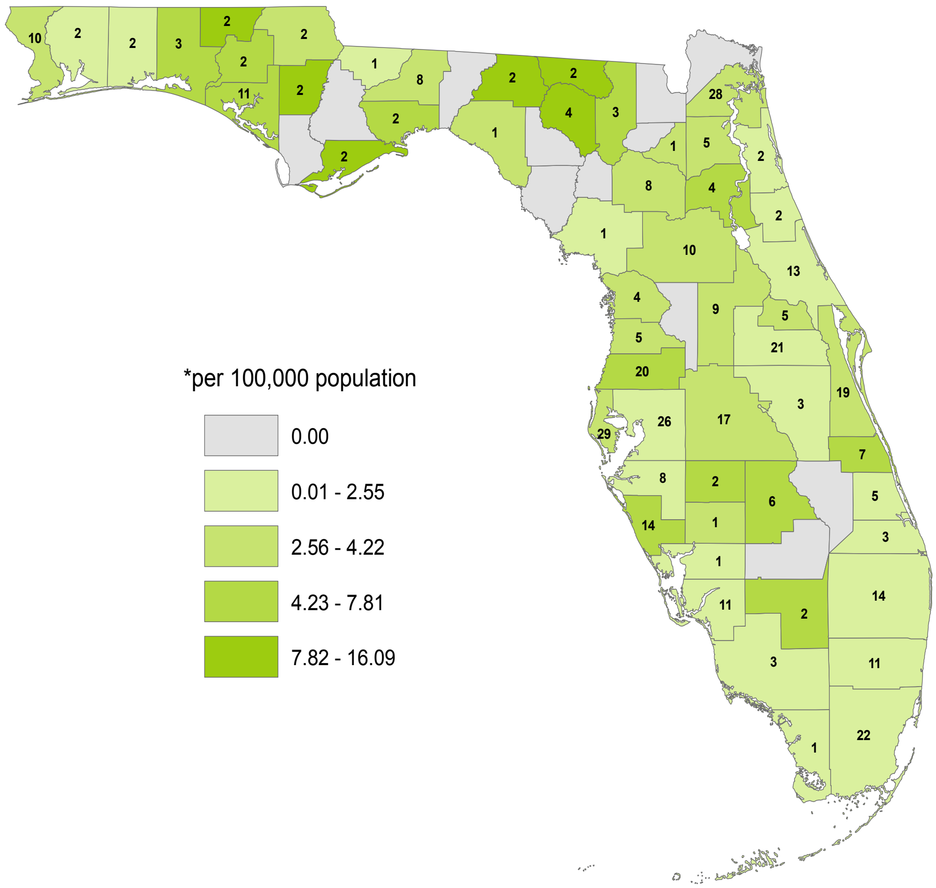
There has been an increase in non-occupational case identification since 2006 due to direct access to FPICN data. However, this additional data set did not result in an increase in the number of reported occupational cases during 2009 (20, 4.9%) (Figure 6).

Figure 6. Pesticide-Related Illness and Injury Cases by Exposure Category, Florida, 1998-2009



The majority of cases occurred in counties with large populations. However, the rate of cases per 100,000 population was highest in the northern part of the state.

Pesticide-Related Illness and Injury Cases and Incidence Rates* by County, Florida, 2009



Prevention

The CDSP analyzes data collected on pesticide exposures and related illnesses to determine risk factors, identify populations at risk, identify areas for further investigation, and determine prevention and intervention activities that are needed to stop further exposures. The program intervenes through education and outreach activities. The program also makes recommendations for regulatory actions and changes.

Prevention Tips for Pesticide Poisoning:

1. When using pesticides:
    - Always read the label first.
    - Strictly follow the directions.
2. Use pesticides safely:
    - Use products only for pests indicated on the label.
    - Use only the minimum amount of pesticide as directed by the label.
    - Twice the amount will not do twice the job.
3. Use protective measures when handling pesticides as directed by the label:
    - Wear impermeable gloves, long pants, and long-sleeve shirt.
    - Change clothes after applying pesticides.
    - Wash your hands immediately after applying pesticides.
4. Before applying a pesticide (indoors or outdoors):
    - Remove children, their toys, and pets from the area to be sprayed.
    - Do not put items back until the pesticide has dried or as specified by label instructions.

Additional Resources
Chemical Disease Surveillance Program (CDSP) at:
http://www.myfloridaeh.com/medicine/Chemical_Surveillance/index.html

Pesticide Surveillance Activities in Florida at:
http://www.doh.state.fl.us/environment/medicine/pesticide/index.html.

Centers for Disease Control and Prevention/ National Institute for Occupational Safety and Health website for Pesticide Illness and Injury Surveillance at: http://www.cdc.gov/niosh/topics/pesticides/.

Q Fever

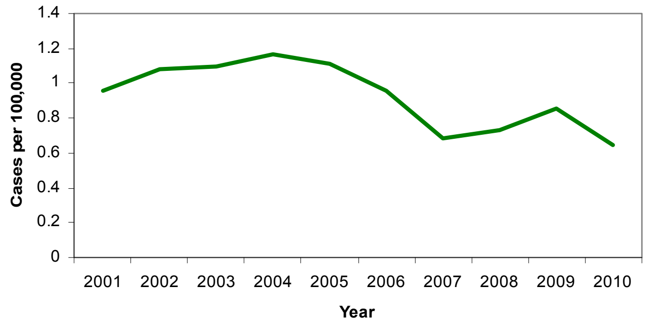
Disease Abstract
Q Fever was last summarized in the annual morbidity report in 2007. Since that time, there have been four probable cases of acute Q Fever, one case each in 2008 and 2009, and two in 2010. Three of the four cases were reported as imported from outside the U.S.; one case, reported in 2010, was acquired in Florida. The 2008 case and one of the 2010 cases involved military personnel exposed while deployed in Iraq. The Centers for Disease Control and Prevention (CDC) report increased numbers of cases in military personnel deployed in the Middle East and Afghanistan, most likely due to endemicity in livestock in those regions. The 2009 case was exposed in India while visiting friends and relatives, and reported drinking unpasteurized milk. The 2010 case acquired in Florida reported no contact with livestock but did regularly drink unpasteurized milk shipped from another state. All four cases were in men. Three of these people were white and one was Asian. Three of them were non-Hispanic and one was Hispanic. The age range was 34 to 64 years.

Q Fever is a zoonotic disease caused by infection with the rickettsial organism *Coxiella burnetii*. It has a global distribution and is resilient in the environment. The most common natural reservoirs are sheep, goats and cattle, but rodents and other animals can also harbor the agent. Ticks are thought to play a role in maintaining animal reservoirs but are not believed to be important in transmission to humans. The agent is shed in animal birthing fluids and may be shed in milk. Transmission to humans occurs primarily through aerosols generated during parturition or from contaminated dust that can carry infectious particles a half mile or more, making identification of exposure difficult in some cases. Transmission can also occur through direct contact with contaminated material or through ingestion of unpasteurized dairy products. The infectious dose is very low and a single organism may lead to infection. Of those exposed, 60% may be asymptomatic. Surveillance is also important because Q Fever has the potential for use as a bioterrorism agent.

Rabies, Animal

Rabies, Animal: Crude Data	
Number of Cases	130
2010 incidence rate per 100,000	0.7
% change from average 5 year (2005-2009) reported incidence rate	-20.7
Age (yrs)	
Mean	N/A
Median	N/A
Min-Max	N/A

Figure 1. Rabies, Animal Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Rabies, Human: From 2001 through 2010, there was one human rabies case in Florida. That infection occurred when an adult male was bitten by a dog in Haiti in 2004 and became ill after returning to Florida. A canine variant strain of rabies then circulating in Haiti was isolated from the patient. There were no human cases identified in 2010, although testing was performed on two Florida residents and one resident of the Philippines. Two suspect cases related to the Haiti earthquake response were also investigated but rabies was ruled out. Please refer to the Rabies, Possible Exposure summary in this same section for further details.

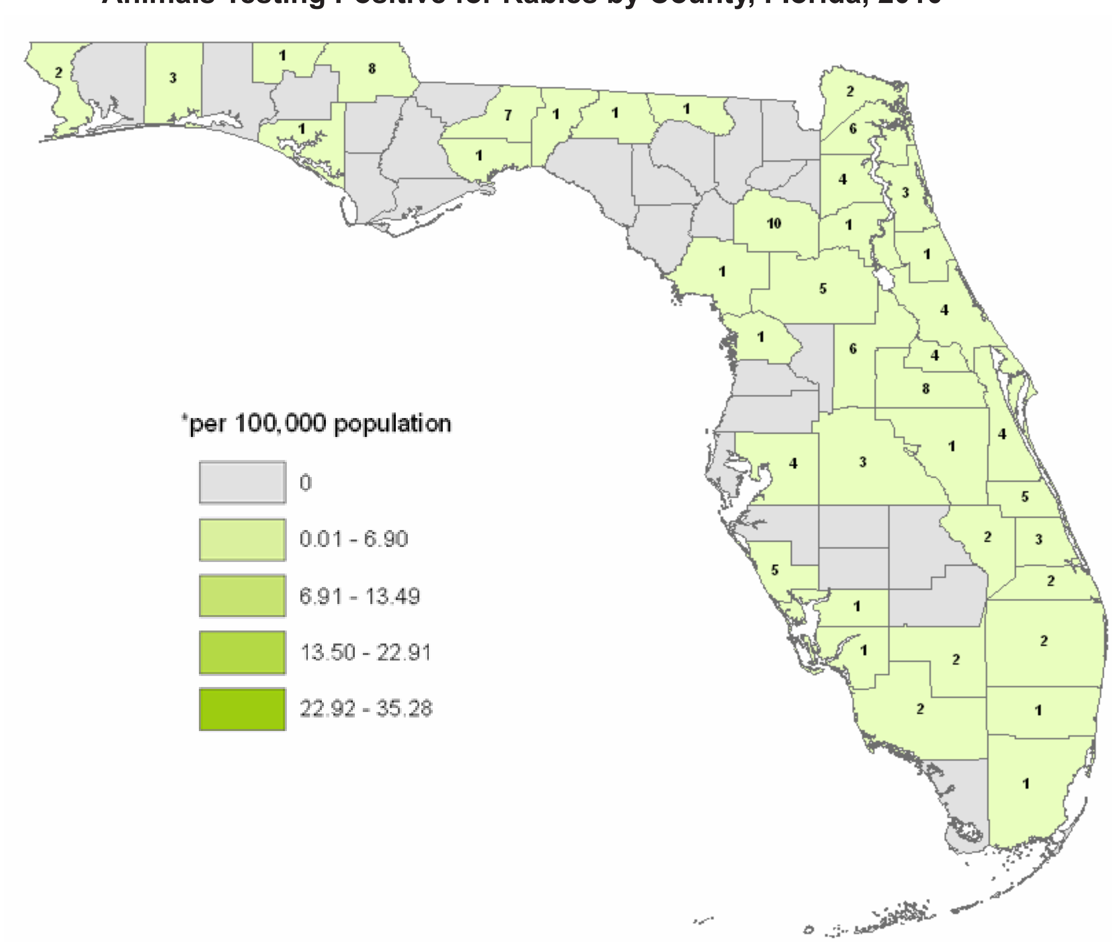
Rabies, Animal: There were a total of 130 rabid animals reported in 2010, but only 128 of those positive results were tested in 2010. This report will describe data based on date tested.

Rabies is endemic in the raccoon and bat populations of Florida, and frequently spills over from raccoons and occasionally from bats into other animal species such as foxes and cats. Laboratory testing for animal rabies is only done when animals expose humans or domestic animals, thus these data do not necessarily correlate with the true prevalence of rabies by animal species in Florida. Among the 2,747 animals tested at the Bureau of Laboratories (BOL) in 2010 there were 128 confirmed rabid animals. This represents a 20.5% decrease in rabid animals from the previous five-year average. There was also an 8.5% decrease in the number of total animals tested for rabies. The decrease may be in part due to decreasing state and local budgets resulting in fewer resources available to pursue animal testing, as well as strict enforcement of a policy limiting testing to wild animals or instances where exposure of humans or pets has occurred prior to animal testing. Fee-based testing through the Kansas State University (KSU) Rabies Laboratory is available for those jurisdictions with funds available to pay for animal testing not associated with a human exposure. One of ten animals submitted to KSU Rabies Laboratory was positive for rabies. The rabies positive animal was a raccoon submitted from Wakulla County following increased reports of suspected rabies activity in wildlife. In 2010, rabid animals were found in 42 of 67 counties in Florida, with the highest activity concentrated in the north and central parts of the state. Alachua County reported the most cases with 10 animals testing positive for rabies; Duval, Jackson, and Orange Counties all had eight animal rabies cases (see map). Animals testing positive for rabies were identified in each month of the year with most activity in summer: July (19) and August (16), followed by a smaller winter-spring peak: February (12), March (12), and April (13). The highest numbers of raccoons testing positive for rabies were identified in July (10), January (9), and February (9). June and July had the most foxes testing positive for rabies, with three each. Six (40%) of 15 rabid bats were identified in August. Four (27%) of 15 rabid cats were identified in December.

Raccoons accounted for the majority of rabid animals in 2010 (75 cases, 59%); rabies was identified in 15 animals (12%) each for bats, foxes, and cats. For the first time since 1997, cats moved from the 4th most common species identified with rabies to second, tied with bats and foxes. Feline rabies was above the 20 year average, while rabies in raccoons, bats, and foxes was below their respective 20 year averages. This may represent increased rabies activity in cats or increased likelihood of human and domestic animal contact with rabid cats compared to rabid wildlife. Since 1997, rabid cats have continued to outnumber rabid dogs although rabies vaccination is compulsory for both. All rabid cats tested in 2010 were either not vaccinated against rabies or had unknown rabies vaccination history. All positive cats were feral (12) or pets (3) allowed to roam outdoors. No dogs were found to be rabid in 2010, although over 600 were tested. One horse from Marion County was found to be rabid and resulted in rabies post-exposure prophylaxis being recommended for 11 people in Marion and Alachua counties. In addition, four bobcats and three otters were positive for rabies. An exhaustive search for several children seen playing with a rabid bat at a local pier was conducted by the Lee County Health Department. An Epi-X alert distributed nationwide resulted in an out-of-state visitor submitting a photo of the children to their local health department, followed by successful identification and prophylaxis of five children in Lee County. A similar situation with a rabid bat at a convenience store in Okeechobee County resulted in successful identification of three children following queries from the county health department to the local school.

Molecular sequencing of select positive samples by KSU Rabies Laboratory confirmed 12 terrestrial animals (one raccoon, three cats, two gray fox, three bobcats, two otters, and one horse) were infected with the eastern U.S. raccoon rabies variant. Bat samples submitted for variant typing are pending.

Animals Testing Positive for Rabies by County, Florida, 2010



Prevention

The Florida Department of Health *Rabies Prevention and Control in Florida, 2011* contains information for county health departments and others involved in rabies control and prevention.
Use preventive measures that include the following strategies.

- Vaccinate pets and at-risk livestock.
- Avoid direct human and domestic animal contact with wild animals.
- Educate the public to reduce contact with stray and feral animals.
- Support animal control in efforts to reduce feral and stray animal populations.
- Bat-proof homes.
- Provide pre-exposure prophylaxis for people in high-risk professions, such as animal control and veterinary personnel, laboratory workers, and those working with wildlife.

Consider pre-exposure prophylaxis for those traveling extensively where rabies is common in domestic animals. Oral bait vaccination programs for wildlife are justified in some situations. These programs can be effective but require careful advance planning and substantial time and financial commitments.

References

Florida Department of Health, *Rabies Prevention and Control in Florida, 2011*, Bureau of Environmental Public Health Medicine, 2011.

Pickering LK, Baker CJ, Long SS, and McMillan JA (eds.), *Red Book: 2009 Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics Press, 2009.

Additional Resources

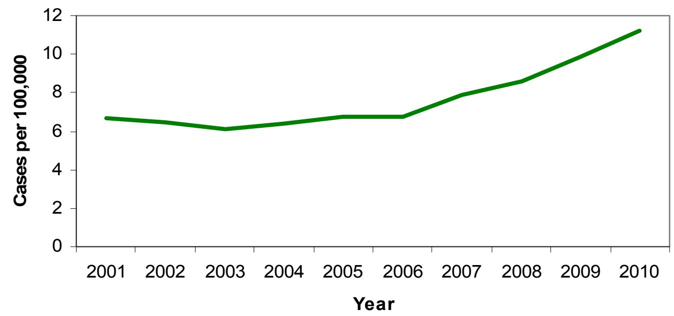
Information is available from the Florida Department of Health website at:
http://www.doh.state.fl.us/environment/medicine/rabies/rabies-index.html.

Disease information is also available from the Centers for Disease Control and Prevention at:
http://www.cdc.gov/rabies/.

Rabies, Possible Exposure

Rabies, Possible Exposure: Crude Data	
Number of Cases	2,114
2010 incidence rate per 100,000	11.3
% change from average 5 year (2005-2009) reported incidence rate	41.3%
Age (yrs)	
Mean	36.9
Median	37
Min-Max	0 - 110

Figure 1. Rabies, Possible Exposure Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

In 2001, reporting of animal encounters for which rabies post-exposure prophylaxis (PEP) is recommended was initiated. Rabies PEP is recommended when an individual is bitten, scratched, or has mucous membrane or fresh wound contact with the saliva or nervous tissue of a laboratory-confirmed rabid animal, or a suspected rabid animal that is not available for testing.

The annual incidence of exposures for which PEP is recommended has increased since case reporting was initiated (Figure 1). In 2010, the incidence rate was up 41.33% over the previous five-year average although the number of confirmed rabid animals decreased in 2010 compared to 2009. This increase in PEP may be due to improved reporting, increased exposures to possible rabid animals, increased inappropriate or unnecessary use of PEP, or a combination of factors. Reductions in state and local resources may contribute to increases in inappropriate or unnecessary use of PEP by decreasing resources to investigate animal exposures and confirm animal health status, and by reducing county health department staff time to provide regular rabies PEP education for health care providers.

Figure 2. Rabies, Possible Exposure Cases by Month of Exposure, Florida, 2010

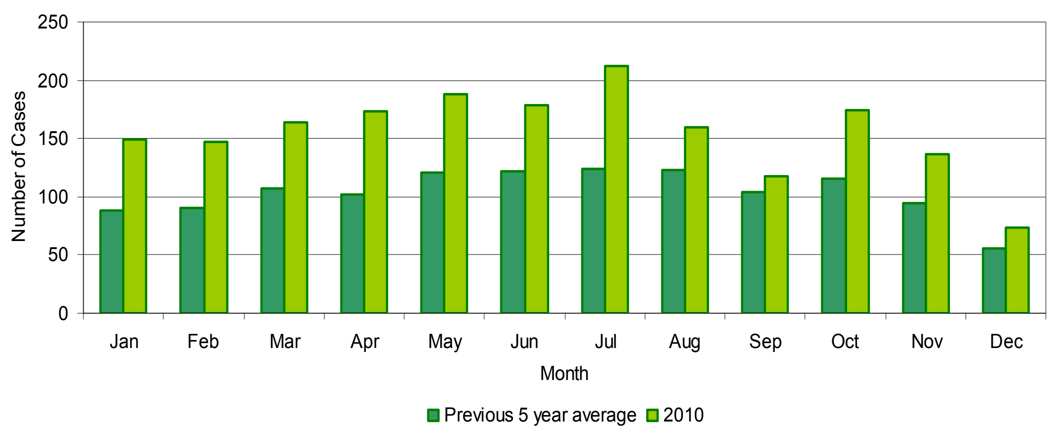
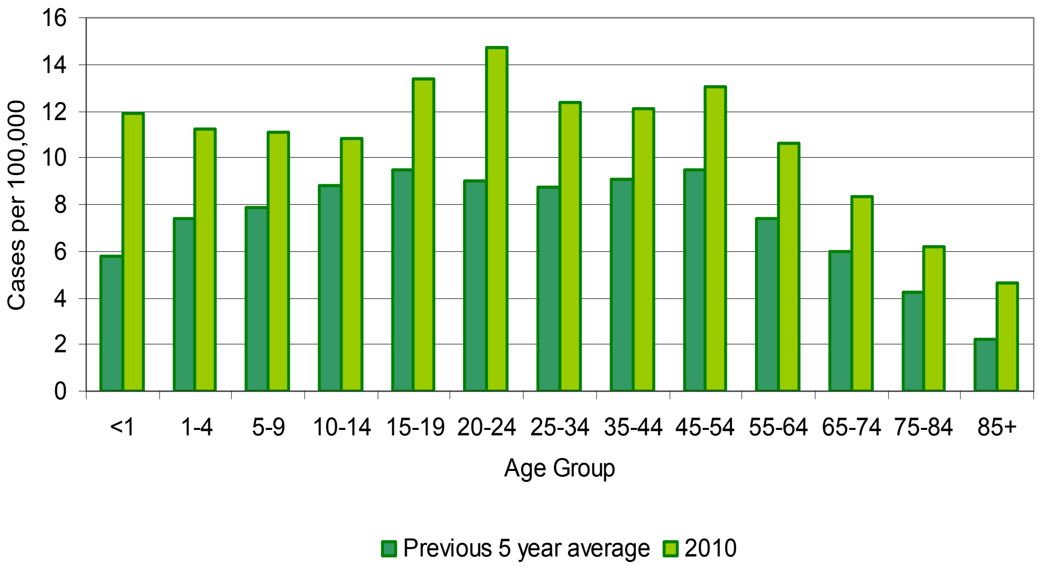


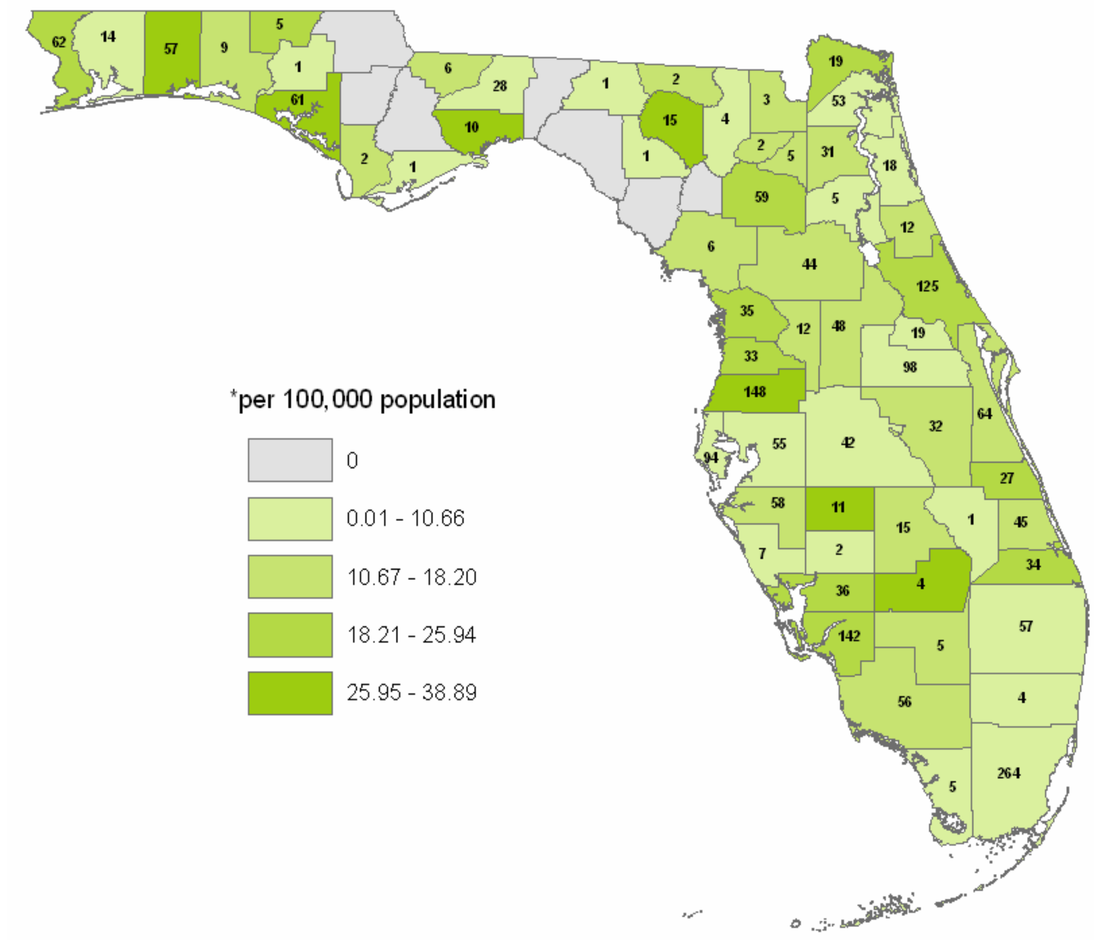
Figure 3. Rabies, Possible Exposure Incidence Rate by Age Group, Florida, 2010



PEP is recommended year round in Florida, though the number of treatment incidents increases somewhat from May to July (Figure 2). The average age of the victim for the 2,114 cases reported in 2010 was 37 years, with a range from under one year to 110 years of age. The highest incidence was seen in individuals aged between 20 and 24 years, but incidence was similar for ages 15 to 19 and 45 to 54 years (Figure 3). There were some variations in age based on the type of animal involved. Average age for those recommended to receive PEP who were exposed to dogs was 32 years; cats, 41 years; and wildlife, 43 years. Men and women were equally represented for PEP when assessing overall exposures and wildlife exposures. However, more men (56%) were recommended to receive PEP for dog exposures, while women (67%) were over-represented in relation to cat exposures. Most persons who were recommended to receive PEP were white (76%), with only 7% of cases representing blacks. Most cases were non-Hispanic (73%), although 14% were Hispanic.

Of the 2,114 cases reported in 2010, the largest proportion of exposed persons for whom treatment was recommended reported exposure to dogs (n=850, 46%). Other animals to which people were exposed include cats (n= 445, 24%), raccoons (n=241, 13%), and bats (n=144, 7%). Less numerous exposures included contact with foxes (16), horses (14), otters (12), squirrels (8), bobcats (5), non-human primates (4), opossums (3), ferrets (3), skunks (2), rats (2), a pig, a cougar, a cow, and other exotic animal species. Though horse exposures are generally low risk, the cases in 2010 were primarily due to exposure of rabies-positive animals. However, squirrels, rats, opossums, owned ferrets, and cattle are also generally low risk species for rabies, and there were no cases of rabies reported in these species. Most 2010 PEP cases involved exposure to stray (42%) or wild (23%) animals. Types of exposure were primarily bites (80%). Scratches were reported in 9% of cases, unknown 6%, other in 4% of cases, saliva in open wound (1.6%), handling (1.4%), bat in the room (1.3%), and saliva on a mucous membrane (<1%) were also reported. Face bites were reported in 99 cases (5%) and typically involved children, average case age was 17 years. Twenty percent of the animals involved in exposures were reported to be owned, 76% of these animals were dogs. Reasons for recommending PEP in cases involving owned animals included face bites, gun shot to the animal's head, and captive wildlife that disappeared. In addition, PEP was inappropriately recommended in some of these cases. Rabies PEP treatment was only known to be initiated 70% of the time; reasons for PEP not being initiated included patient refusal or inappropriate treatment recommendation by the health care provider.

Rabies, Possible Exposure Cases and Incidence Rates* by County, Florida, 2010



Prevention

Contact with wildlife and unfamiliar domestic animals should be limited. It is especially important to educate children about appropriate interactions with animals. If bitten, wash the area thoroughly with soap and water, seek medical attention, and report the bite to the local county health department.

Additional Resources

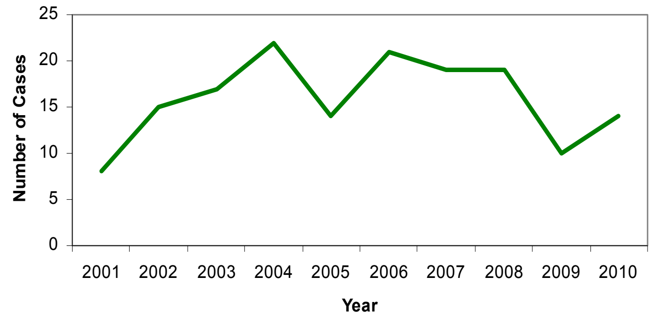
Additional information on animal bites and PEP can be found in the Rabies Prevention and Control in Florida, 2011 Guidebook, online at: http://myfloridaeh.com/medicine/rabies/rabies-index.html.

Dog bite prevention and rabies information can also be found on the Department of Health website at: http://www.myfloridaeh.com/medicine/arboviral/Zoonoses/dogbite_home.html.

Rocky Mountain Spotted Fever

Rocky Mountain Spotted Fever: Crude Data	
Number of Cases	13
2010 incidence rate per 100,000	0.07
% change from average 5 year (2005-2009) reported cases	-15.7%
Age (yrs)	
Mean	58.1
Median	60
Min-Max	41 - 71

Figure 1. Rocky Mountain Spotted Fever Cases by Year Reported, Florida, 2001-2011



Disease Abstract

National reporting criteria for Rocky Mountain Spotted Fever (RMSF) (causative agent is *Rickettsia rickettsii*) was expanded to include all spotted fever rickettsiosis (SFR). Florida is in the process of revising state case definitions to align with updated SFR national reporting criteria. Although only RMSF was reportable in 2010, notifications regarding infections with other SFR agents sent to FDOH in 2010 occurred and will also be described in this report. Antibodies for other spotted fever rickettsial species, such as *Rickettsia parkeri, R. amblyommii, R. africae*, and *R. conorii,* cross-react with serologic tests for the RMSF agent *R. rickettsii,* and commercial testing to differentiate other SFR from RMSF is currently limited. This may explain, in part, apparent changes in RMSF incidence and geographic distribution. Clinically, the presence of eschar type lesions at the site of the tick bite is suggestive of infection from a SFR other than *R. rickettsii*.

In 2010, there were 13 cases of RMSF reported (Figure 1). However, one case of SFR from *R. africae* infection was reported as a RMSF case in the Merlin reportable disease surveillance system, which brings the total listed under RMSF in Merlin to 14. All 14 cases, (four confirmed and ten probable) had positive serology for RMSF at commercial labs, although there were four infections with eschar lesions indicating an SFR other than RMSF. Two of the four infections with eschar lesions were able to have additional testing performed by the Center for Disease Control and Prevention (CDC). In one case, CDC positive serology results identified both *R. rickettsii* and *R. parkeri*. The fourth case with an eschar and commercial laboratory results for *R. rickettsii* was confirmed to be *R. africae* by CDC. This infection was in a woman aged 44 years from Miami-Dade County with travel to South Africa. In addition to the 13 RMSF cases and *R. africae* infection, there was also an SFR case reported in a woman aged 53 years from Pinellas County with travel to South Africa. The woman presented with an eschar lesion and the causative agent was confirmed by the CDC to be *R. conorii.*

The extent that ecological factors such as rainfall, ambient temperature, fluctuations in tick host densities, and other factors have on incidence of disease in humans in Florida is unknown. In Florida, cases of RMSF are reported year-round, though peak transmission typically occurs during the summer months (Figure 2). In 2010, more cases were reported in April and May than usual, which likely reflects favorable conditions due to one or more of the environmental variables listed above. Of the 2010 cases, nine (64%) acquired the disease in Florida, four (29%) acquired the disease in another U.S. state, and one was acquired in South Africa (*R. africae* case).

Figure 2. Rocky Mountain Spotted Fever Cases by Month of Onset, Florida, 2010

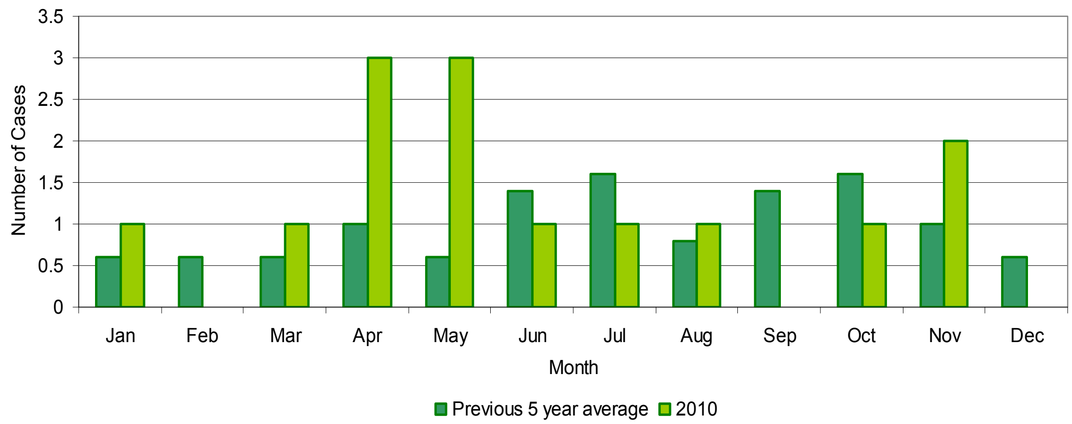
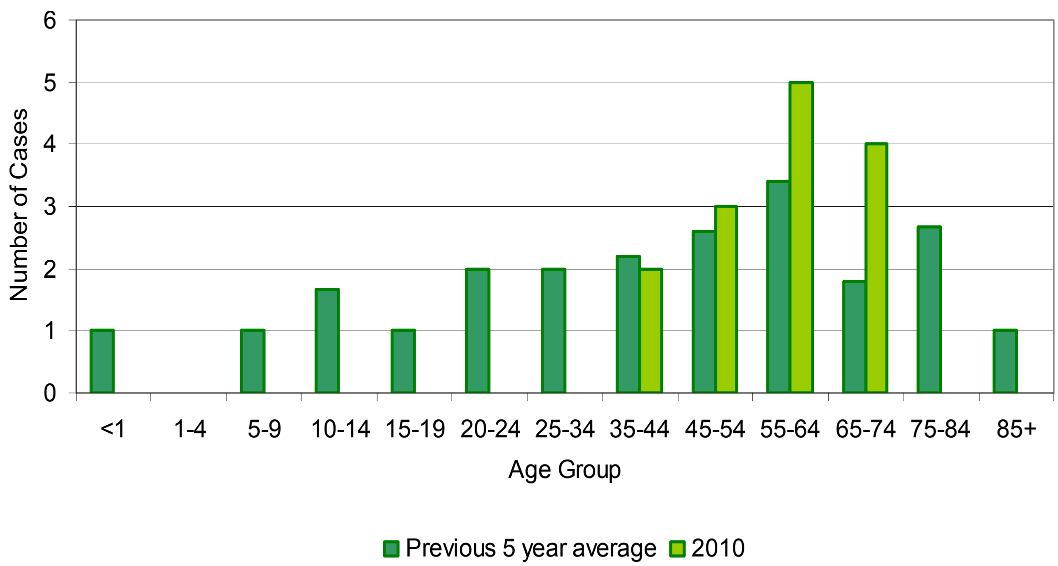


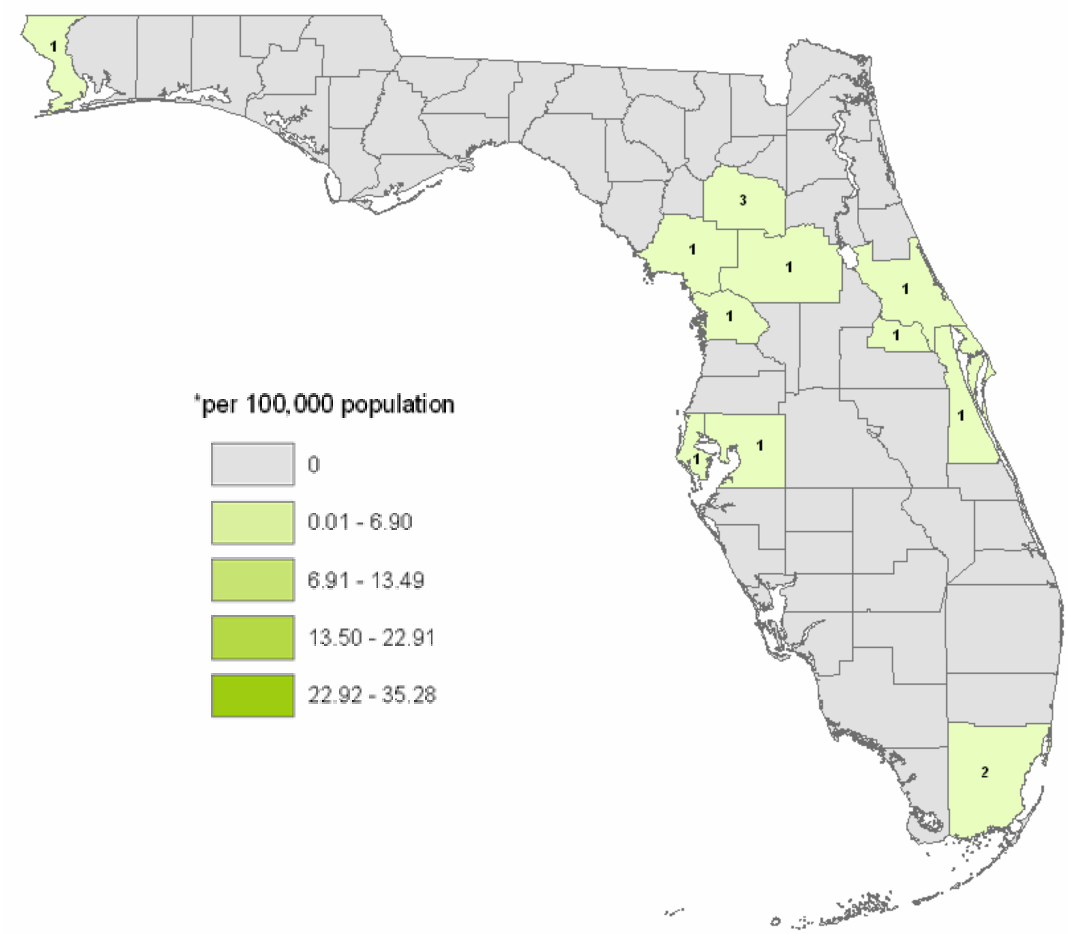
Figure 3. Rocky Mountain Spotted Fever Cases by Age Group, Florida, 2010



RMSF tends to affect adults more than other age groups, and in 2010, there were more cases reported in those aged 55 to 64 years than in any other age group (Figure 3). The elderly, males, blacks, those with glucose-6-phosphate-dehydrogenase (G6PD) deficiency, and those with a history of alcohol abuse are at greatest risk for severe disease. In 2010, males accounted for ten cases (71%) and females four cases (39%). All cases were white, and all except the *R. africae* case were non-Hispanic. There were no deaths attributed to RMSF and only three patients (21%) were hospitalized. The national case fatality rate for treated cases is approximately 5% and for untreated cases is up to 20%.

The American dog tick, *Dermacentor variabilis*, is the principal RMSF vector in Florida; the primary vector for *R. parkeri* is the Gulf Coast tick, *Amblyomma maculatum*; and the primary vector for *R. amblyomma* is believed to be the Lone Star tick, *Amblyomma americanum*.

Rocky Mountain Spotted Fever Cases by County, Florida, 2010



Prevention

Prevention of tick bites is the best way to avoid disease. Methods for preventing tick bites include:

- Wear light-colored clothing so that ticks crawling on clothing are visible.
- Tuck pants legs into socks so that ticks cannot crawl inside clothing.
- Apply repellent to discourage tick attachment. Repellents containing permethrin can be sprayed on boots and clothing, and will last for several days. Repellents containing DEET can be applied to the skin, but will last only a few hours before reapplication is necessary.
- Search the body for ticks frequently when spending time in potentially tick-infested areas.
- If a tick is found, it should be removed as soon as possible.
    - o Using fine tweezers or a tissue to protect fingers, grasp the tick close to the skin and gently pull straight out without twisting.
    - o Do not use bare fingers to crush ticks.
    - o Wash your hands following tick removal.
- Control tick populations in the yard and on pets to reduce the risk of disease transmission.

Additional Resources
Disease information is also available from the Florida Department of Health at:
http://www.doh.state.fl.us/Environment/medicine/arboviral/Tick_Borne_Diseases/Tick_Index.htm.

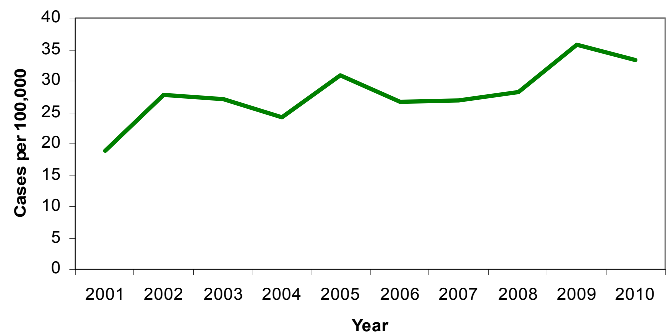
Disease information is available from the CDC at: http://www.cdc.gov/ncidod/dvrd/rmsf/index.htm.

Paddock CD, Sumner JW, Comer JA, et al, "*Rickettsia parkeri*: a Newly Recognized Cause of Spotted Fever Rickettsiosis in the United States," *Clin Infect Dis.,* 2004 (38):805-11.

Salmonellosis

Salmonellosis: Crude Data	
Number of Cases	6,281
2010 incidence rate per 100,000	33.4
% change from average 5 year (2005-2009) reported incidence rate	12.7%
Age (yrs)	
Mean	23.2
Median	7
Min-Max	0 - 103

Figure 1. Salmonellosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract
Salmonellosis is a diarrheal disease caused by infection with bacteria of the genus *Salmonella*. This category does not include typhoid fever. The incidence rate for salmonellosis has increased over the last ten years (Figure 1). In 2010, the incidence was 33.43 cases per 100,000 population, an increase from the previous peak in 2005 of 12.65 cases per 100,000 population. In 2010, 6,282 cases were reported, with 95.3% confirmed. The number of cases reported increases every year in the summer and early fall. In 2010, the number of cases exceeded the previous five-year average in all months except May (Figure 2). Data published in the Morbidity and Mortality Weekly Report (MMWR) indicate that Florida reported more cases of salmonellosis in 2010 than any other state. Overall, 7.8% of salmonellosis cases were classified as outbreak-related in 2010.

Figure 2. Salmonellosis Cases by Month of Exposure, Florida, 2010

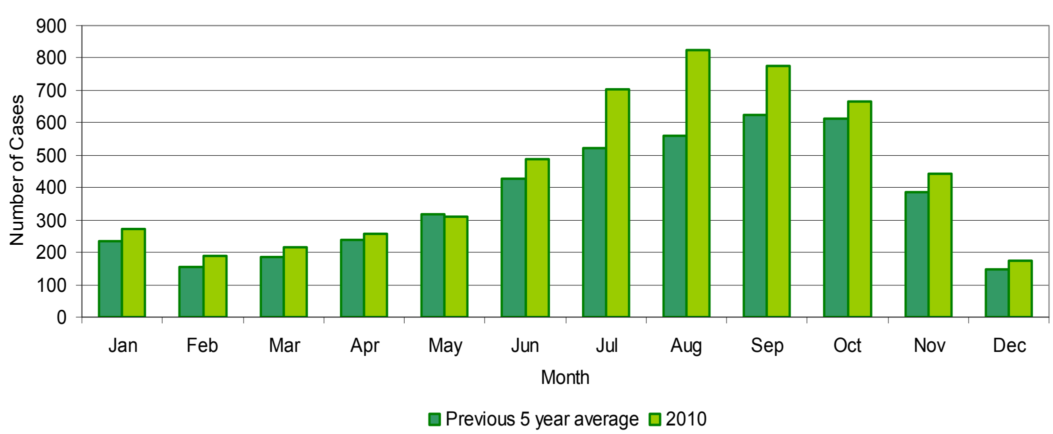
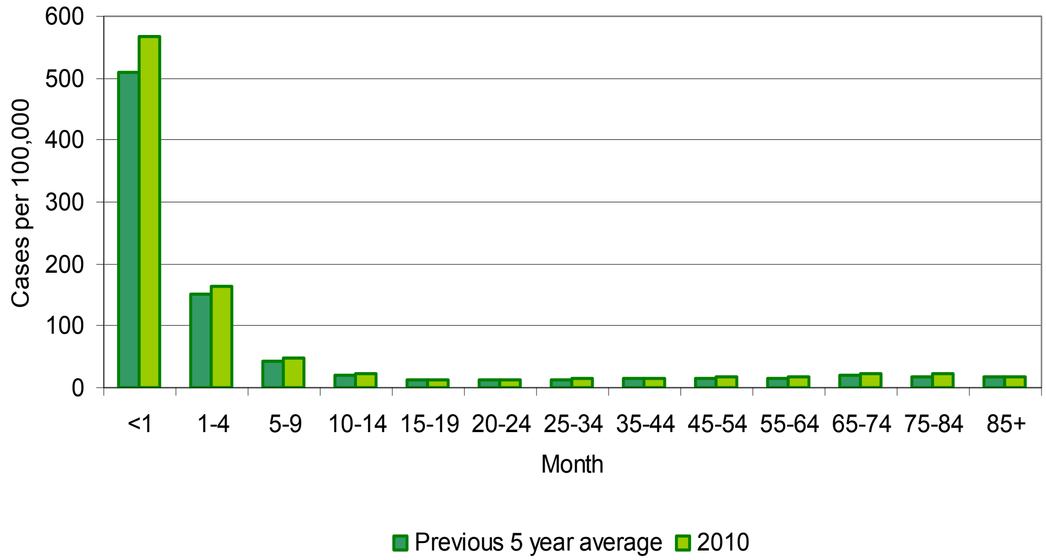


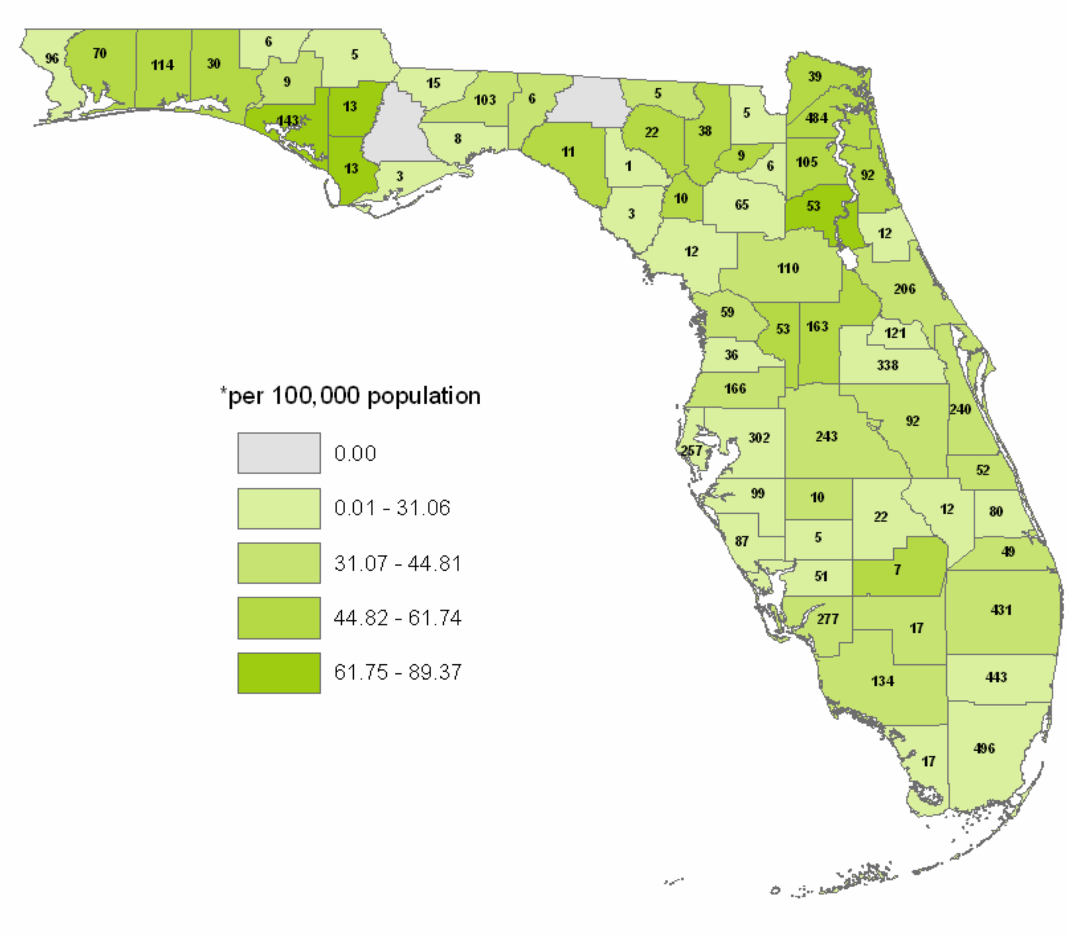
Figure 3. Salmonellosis Incidence Rate by Age Group, Florida, 2010



The highest incidence rates continue to occur among infants aged less than one year and children aged one to four years. In 2010, the incidence rates were slightly higher than the previous five-year average in all age groups, but the increase was most pronounced in those aged less than one year (Figure 3). Males and females have similar incidence rates (33.46 and 33.39 per 100,000, respectively).

Salmonellosis was reported in 65 of 67 counties in Florida (Figure 4). Rates vary across the state, but appear to be higher in the eastern panhandle, northeastern, and central portions of the state. In 2010, the Florida Department of Health launched a case-control study to determine risk factors for salmonellosis among children less than five years of age residing in central Florida. Results will be published in future reports.

Figure 4. Salmonellosis Cases and Incidence Rates* by County, Florida, 2010



Prevention

Reduce the likelihood of contracting salmonellosis by using these preventive measures:

- Cook all meat products and eggs thoroughly, particularly poultry.
- Avoid cross-contamination by cleaning utensils, counter tops, cutting boards, and sponges and making sure they do not come in contact with raw poultry or other meat.
- Wash your hands thoroughly before, during, and after food preparation.
- Do not allow the fluids from raw poultry or meat to drip onto other foods.
- Consume only pasteurized milk, milk products, or juices.
- Wash your hands after coming into contact with any animals or their environment.
- Wash your hands, and children's hands, after toilet use.

References

L. Pickering (ed.), 2009 *Red Book: Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics, Elk Grove Village, IL, 2009, pp. 992.

Florida Department of Health, Guidelines for Control of Outbreaks of Enteric Disease in Child Care Settings: http://www.doh.state.fl.us/disease_ctrl/epi/surv/enteric.pdf.

Additional Resources

Disease information is available from the CDC at: http:// www.cdc.gov/salmonella/.

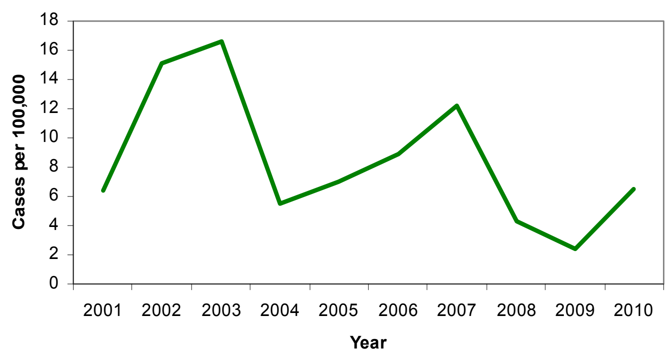
Additional information is available from the U.S Food and Drug Administration – "Bad Bug Book" at: http://www.fda.gov/Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathpgensNaturalToxins/BadBugBook/ucm069966.htm.

R. Baker, et al, "Outbreak of Salmonella Serotype Javiana Infections-Orlando, Florida, June 2002," *MMWR*, Vol. 51, No. MM31, p. 683.

Shigellosis

Shigellosis: Crude Data	
Number of Cases	1,212
2010 incidence rate per 100,000	6.5
% change from average 5 year (2005-2009) reported incidence rate	-7.6%
Age (yrs)	
Mean	15.5
Median	6
Min-Max	0 - 89

Figure 1. Shigellosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

Shigellosis is a diarrheal disease caused by infection with bacteria of the genus *Shigella.* The incidence rate for shigellosis has varied over the last ten years (Figure 1). Periodic community outbreaks involving childcare centers account for most of the observed variability. In 2010, daycare attendees accounted for 26.3% of all cases, compared to 17.8% in 2009. This number does not take into account cases infected by an initial day-care-associated case. Although in 2010 there was a 7.6% decrease in comparison to the average incidence from 2005 to 2009, more than twice as many cases were reported in 2010 compared to 2009 (461). Only 80.0% of cases were confirmed in 2010, compared to 92.2% confirmed in 2009, which indicates increased outbreak activity. Overall, 28.6% of shigellosis cases were classified as outbreak-associated. Historically, the number of cases does not show a distinct seasonal pattern, but instead varies between years. In 2010, the number of cases increased steadily from January to August, and remained high through the end of the year (Figure 2).

Figure 2. Shigellosis Cases by Month of Exposure, Florida, 2010

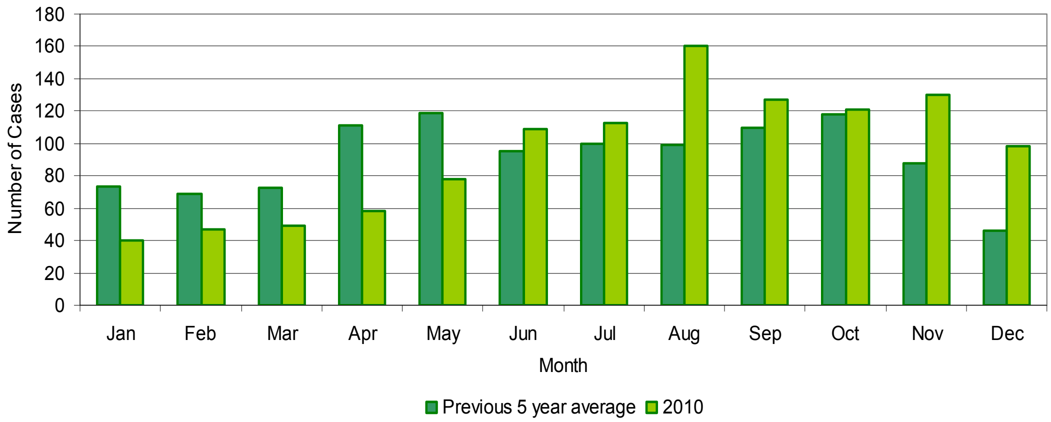
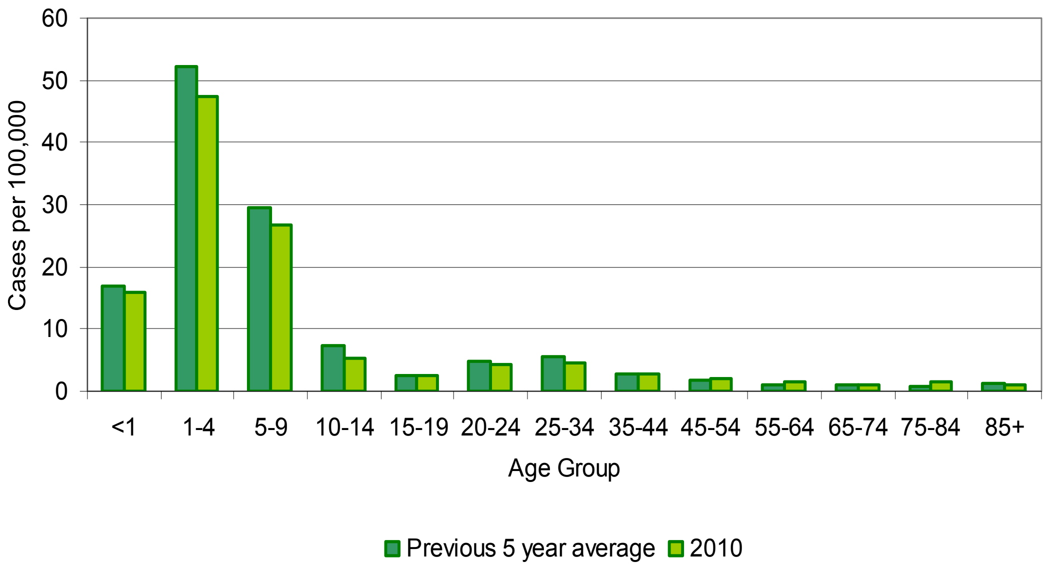


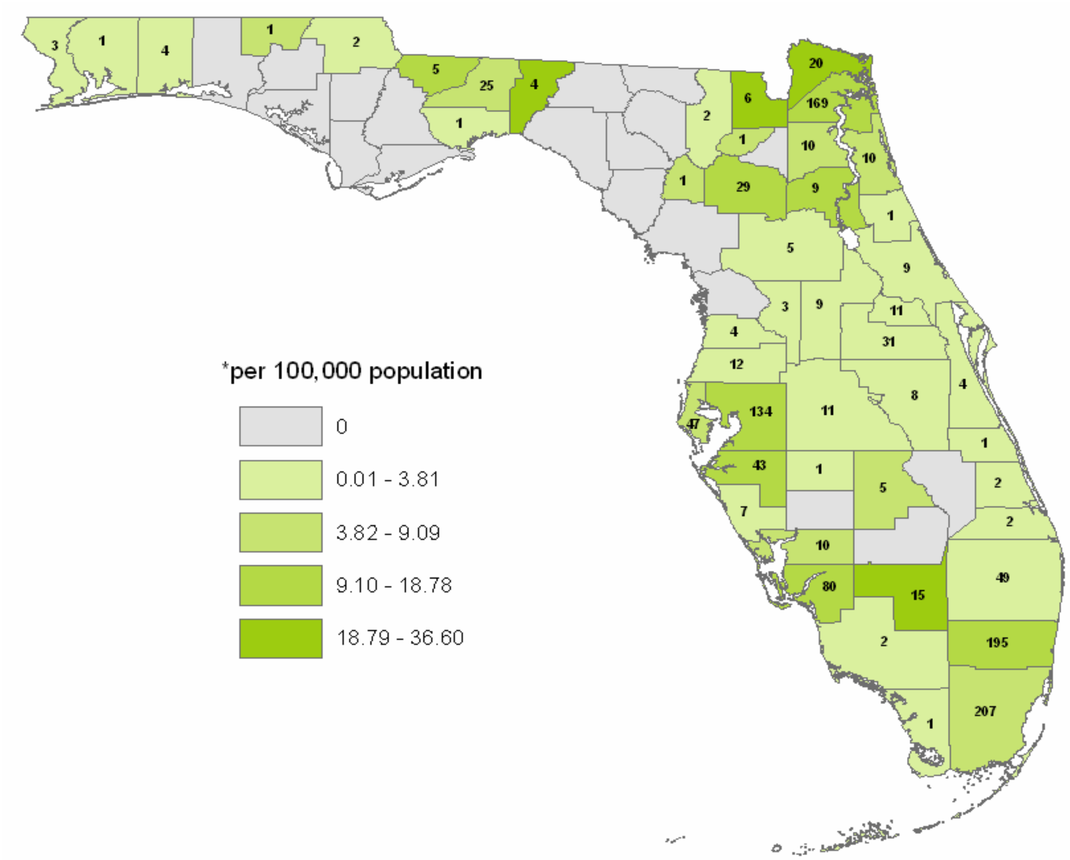
Figure 3. Shigellosis Incidence Rate by Age Group Florida, 2010



The highest incidence rates continue to occur among children aged one to four years old. In 2010, the pattern of incidence rates by age was similar to the five-year average but overall levels were slightly lower (Figure 3). Incidence rates were similar among females and males (6.5 and 6.4 per 100,000 respectively).

Shigellosis was reported in 48 of 67 counties in Florida (Figure 4). Cases were concentrated in the southeastern, central western, and northeastern part of the state.

Figure 4. Shigellosis Cases and Incidence Rates* by County, Florida, 2010



Prevention

To reduce the likelihood of contracting and spreading shigellosis, it is important to practice good hand hygiene, especially hand washing by children and adults after toilet use and before preparing food. Outbreaks in daycare centers are common and control may be difficult. The Florida Department of Health has published outbreak control measures for childcare settings (see references).

References

L. Pickering (ed.), 2009 *Red Book: Report of the Committee on Infectious Diseases*, 28th ed., American Academy of Pediatrics, Elk Grove Village, IL, 2009, pp. 992.

Florida Department of Health Guidelines for Control of Outbreaks of Enteric Disease in Child Care Settings: http://www.doh.state.fl.us/disease_ctrl/epi/surv/enteric.pdf.

Additional Resources

Disease information is available from the CDC at:
http://www.cdc.gov/nczved/divisions/dfbmd/diseases/shigellosis/.

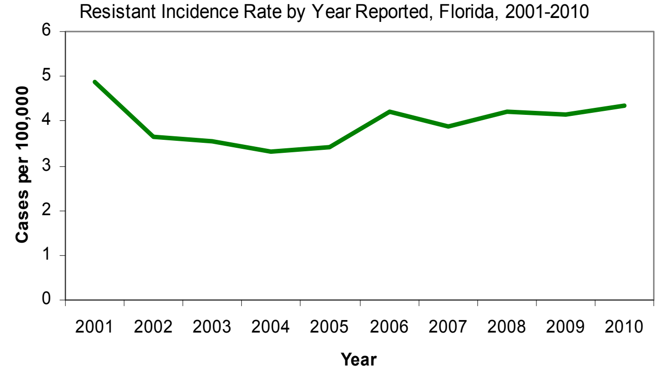
Additional information is available from the U.S Food and Drug Administration – “Bad Bug Book” at:
http://www.fda.gov/Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathpgensNaturalToxins/BadBugBook/ucm070563.htm.

CDC, “Outbreak of Gastroenteritis Associated With an Interactive Water Fountain at a Beachside Park - Florida, 1999,” *MMWR*, Vol. 49, No. 25, 2000, pp. 565-8.

Streptococcus pneumoniae, Invasive Disease, Drug-Resistant

Streptococcus pneumoniae, Invasive Disease, Drug-Resistant: Crude Data	
Number of Cases	816
2010 incidence rate per 100,000	4.3
% change from average 5 year (2005-2009) reported incidence rate	9.5%
Age (yrs)	
Mean	47.4
Median	53
Min-Max	0 - 98

Figure 1. *Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant Incidence Rate by Year Reported, Florida, 2001-2010

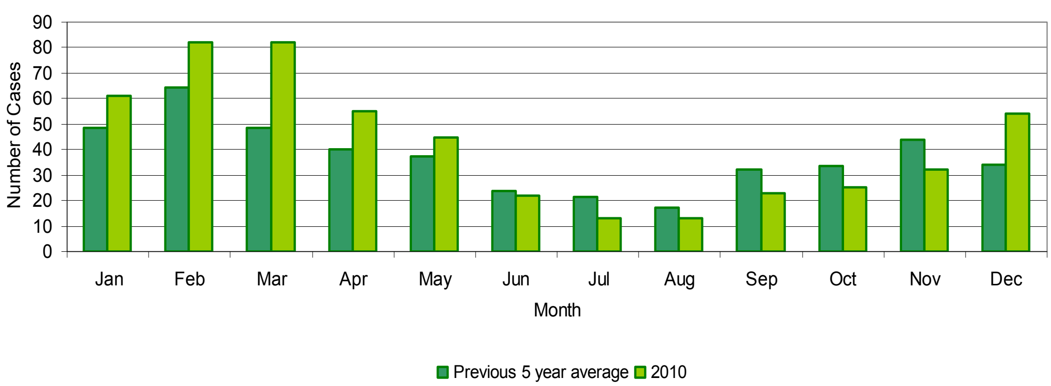


Disease Abstract

Drug-resistant *S. pneumoniae* (DRSP) invasive disease is reportable by laboratories but not doctors or hospitals. A case, for reporting purposes, is defined by a culture obtained from a normally sterile site, such as blood or cerebrospinal fluid, that is either intermediate resistant or fully resistant to one or more commonly used antibiotics. The annual incidence rate for DRSP peaked in 2000 and gradually declined until 2005 when it increased again and is now relatively consistent at around four cases per 100,000 population per year (Figure 1).

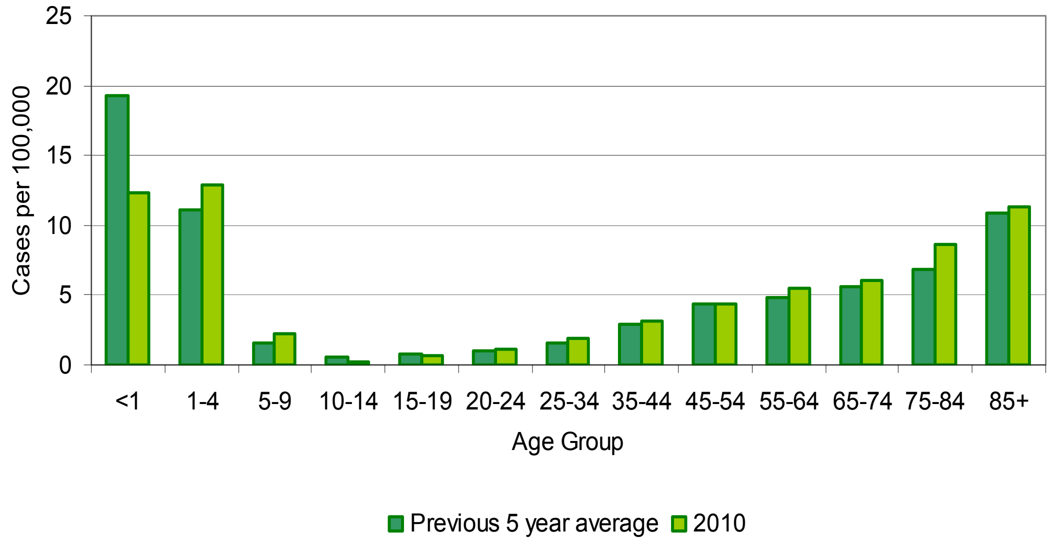
The majority of cases occur during the winter months. In 2010, this seasonal peak was more pronounced, although the overall rate was only slightly elevated from previous years (Figure 2).

Figure 2. *Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant Cases by Month of Exposure, Florida, 2010



Incidence rates are highest among infants aged less than one year, children aged one to four years, and those aged 85 and over. In 2010, the incidence rates were lower than the previous five-year average in infants aged less than one year (Figure 3).

Figure 3. *Streptococcus pneumoniae*, Invasive Disease, Drug-Resistant Incidence Rate by Age Group, Florida, 2010

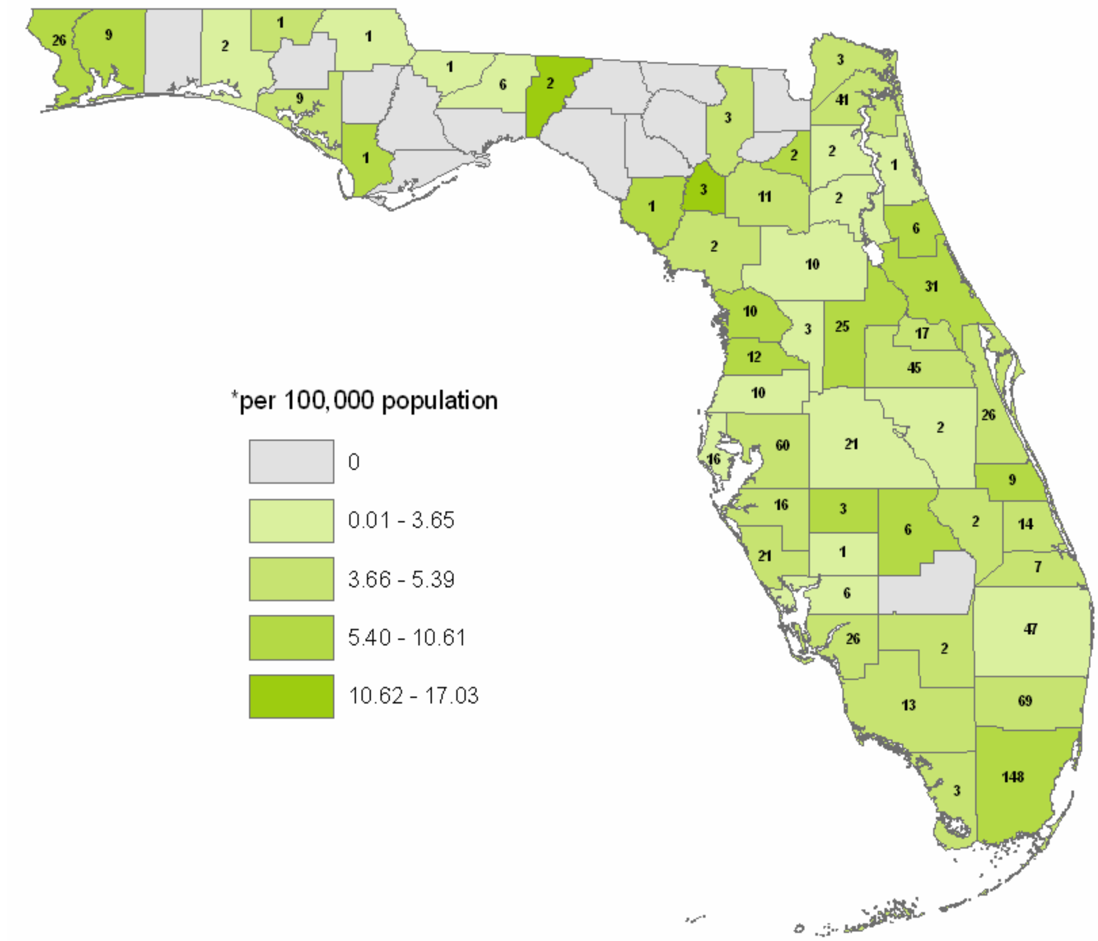


Males and females have similar rates of disease (4.6 and 4.1 per 100,000, respectively). The incidence among blacks (7.4 per 100,000) was more than twice that among whites (3.6 per 100,000). Hispanics had a slightly lower rate of disease than did non-Hispanics (3.1 versus 4.4 per 100,000).

The data from both the drug-resistant and drug-sensitive *S. pneumoniae* isolates reported were used to monitor resistance rates to common antibiotics in this organism. In general, trends in resistance rates have been relatively stable for the past several years. Please see "Section 4: Summary of Antimicrobial Resistance Surveillance" for more details on specific resistance patterns of *S. pneumoniae* in Florida.

Drug-resistant *S. pneumoniae* was reported in 65 of 67 counties in Florida (Figure 4). Additional information regarding antimicrobial resistance data in Florida can be found in Section 4: Summary of Antimicrobial Resistance Surveillance.

Figure 4. *Streptococcus pneumoniae,* Invasive Disease, Drug-Resistant Cases and Incidence Rate* by County, Florida, 2010



Prevention

The most effective way of preventing pneumococcal infections, including DRSP infections, is through vaccination. Currently, there are two vaccines available. A conjugate vaccine is recommended for all children through age five, with vaccination beginning in the first year of life. The pneumococcal polysaccharide vaccine should be administered routinely to all adults >65 years. The vaccine is also indicated for children aged six through eighteen with certain underlying medical conditions. Additionally, it is important to practice good hand hygiene, to take antibiotics only when necessary, and to finish the entire course of any prescribed treatment.

References

American Academy of Pediatrics, *Red Book 2009: Report of the Committee on Infectious Diseases,* 28th ed., American Academy of Pediatrics Press, Elk Grove Village, Illinois, 2009.

William Atkinson (ed.) et al, *Epidemiology and Prevention of Vaccine-Preventable Diseases,* 10th ed., Public Health Foundation, Washington, District of Columbia, 2007.

Michael T. Drennon, "Drug Resistant Patterns of Invasive *Streptococcus pneumoniae* Infections in the State of Florida in 2003," Master's Thesis, University of South Florida, Tampa, 2006.

Department of Health website, "*Streptococcus pneumoniae*" at: http://www.doh.state.fl.us/Disease_ctrl/epi/htopics/anti_res/S.pneumoniae.htm.

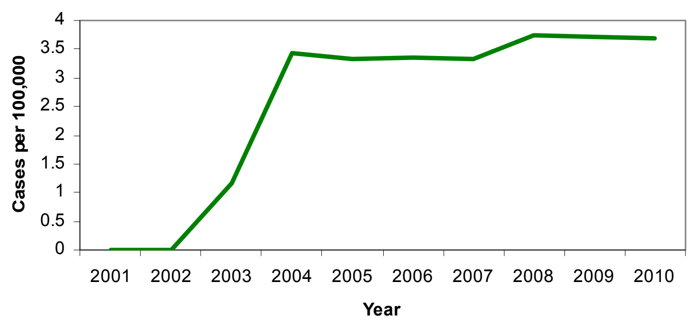
Additional Resources
Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov//ncidod/dbmd/diseaseinfo/drugresisstreppneum_t.htm.

Centers for Disease Control and Prevention, "Preventing Pneumococcal Disease Among Infants and Young Children: Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *MMWR*, Vol. 49, No. RR-9, 2000, pp. 1-35.

Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible

Streptococcus pneumoniae, Invasive Disease, Drug-Susceptible: Crude Data	
Number of Cases	693
2010 incidence rate per 100,000	3.7
% change from average 5 year (2005-2009) reported incidence rate	5.6%
Age (yrs)	
Mean	53.8
Median	57
Min-Max	0 - 104

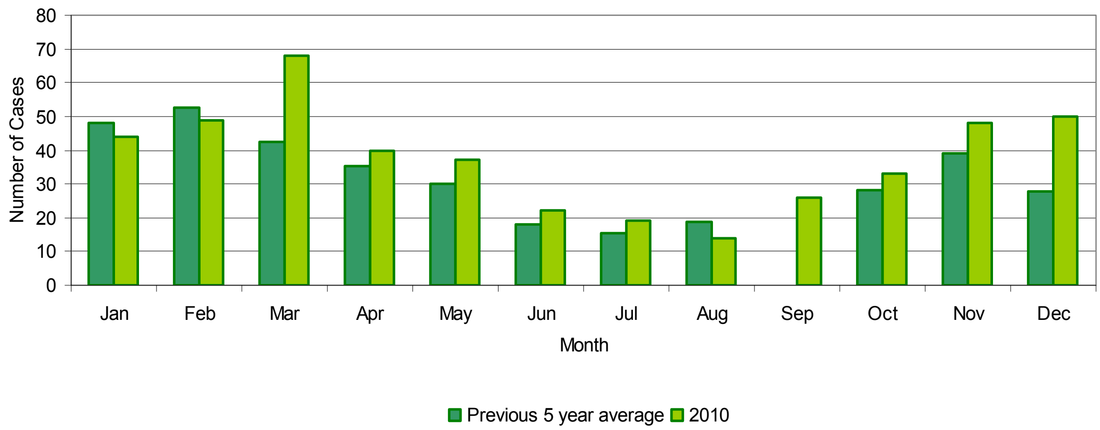
Figure 1. *Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract
Drug-susceptible *Streptococcus pneumoniae* (DSSP) invasive disease is reportable by laboratories but not doctors or hospitals. A case, for reporting purposes, is defined by a culture obtained from a normally sterile site, such as blood or cerebrospinal fluid, that is sensitive to all of the commonly used antibiotics for which testing was done. Data on drug-susceptible DSSP has been available for the last seven years. Since the second year of reporting, in 2004, the annual incidence of DSSP has been stable around three to four cases per 100,000 population (Figure 1).

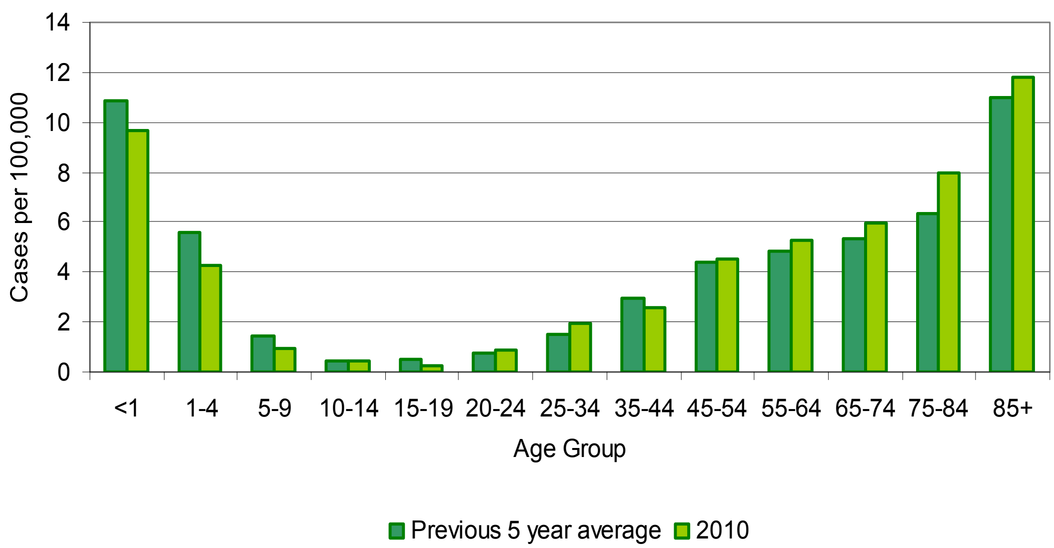
The majority of cases occur during the winter months. In 2010, this same trend held true, although there were a notably higher number of cases in December and March compared with the previous five year average (Figure 2).

Figure 2. *Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible Cases by Month of Exposure, Florida, 2010



Incidence rates are highest among infants and young children, and drop in older children, teens, and young adults, and increase with increasing age, peaking again in those aged 85 and older. In 2010, the age distribution of cases was similar to previous years (Figure 3).

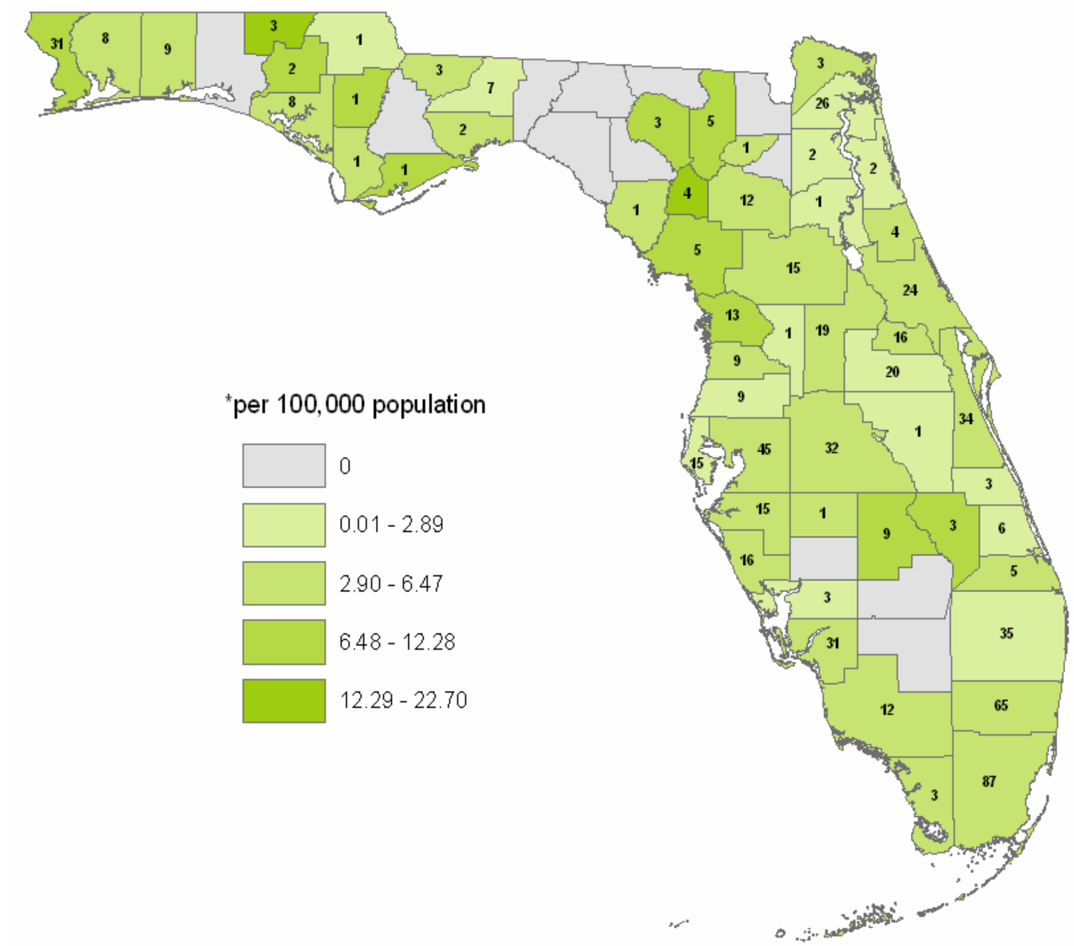
Figure 3. *Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible Incidence Rate by Age Group, Florida, 2010



Males and females have similar rates of disease (3.9 and 3.5 per 100,000 population, respectively). The incidence among blacks (5.4 per 100,000) was higher than among whites (3.3 per 100,000). Hispanics had a lower rate of disease than did non-Hispanics (2.1 versus 3.9 per 100,000).

DSSP was reported in 55 of 67 counties in Florida (Figure 4). Additional information regarding antimicrobial resistance data in Florida can be found in Section 4: Summary of Antimicrobial Resistance Surveillance.

Figure 4. *Streptococcus pneumoniae*, Invasive Disease, Drug-Susceptible Cases and Incidence Rate* by County, Florida, 2010



Prevention

The most effective way of preventing pneumococcal infections, including drug resistant and drug susceptible DSSP infections, is through vaccination. Currently, there are two vaccines available. A conjugate vaccine is recommended for all children through age five, with vaccination beginning in the first year of life. The older pneumococcal polysaccharide vaccine should be administered routinely to all adults aged >65 years. The vaccine is also indicated for children aged six through eighteen years with certain underlying medical conditions. Additionally, it is important to practice good hand hygiene, to take antibiotics only when necessary, and to finish the entire course of any prescribed treatment.

References

American Academy of Pediatrics, *Red Book 2009: Report of the Committee on Infectious Diseases,* 28th ed., American Academy of Pediatrics Press, Elk Grove Village, Illinois, 2009.

William Atkinson (ed.) et al., *Epidemiology and Prevention of Vaccine-Preventable Diseases,* 12th ed., Public Health Foundation, Washington, District of Columbia, 2011.

Michael T. Drennon, “Drug Resistant Patterns of Invasive *Streptococcus pneumoniae* Infections in the State of Florida in 2003,” Master’s Thesis, University of South Florida, Tampa, 2006.

Department of Health website, "*Streptococcus pneumoniae*" at:
http://www.doh.state.fl.us/Disease_ctrl/epi/htopics/anti_res/S.pneumoniae.htm.

Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov//ncidod/dbmd/diseaseinfo/drugresisstreppneum_t.htm.

Centers for Disease Control and Prevention, "Preventing Pneumococcal Disease Among Infants and Young Children: Recommendations of the Advisory Committee on Immunization Practices (ACIP)," *MMWR,* Vol. 49, No. RR-9, 2000, pp. 1-35.

Syphilis

Disease Abstract

Syphilis, caused by the bacterium *Treponema pallidum*, is passed from person-to-person through direct contact with an infectious sore, or with infectious mucous patches and syphilitic warts (condylomata lata). Syphilis infection, when left untreated, may progress through several stages over time: primary, secondary, early latent, late latent, and potentially, to neurosyphilis. Transmission of syphilis can occur during vaginal, anal, and oral sex. During pregnancy, the organism can infect a fetus in utero or at delivery. In 2010, there were 4,071 syphilis cases reported in Florida, of those cases, 19 were reported as congenital cases.

This report will focus on the earlier stages of syphilis. Total early (primary, secondary, early latent) syphilis includes all cases where initial infection has occurred within the previous 12 months. In 2010, there were 2,479 early syphilis cases reported in Florida, an increase of 183 cases from 2009 (2,296) and 1,185 primary and secondary syphilis cases. Of the total cases reported, 61% of cases were diagnosed as primary, secondary, or early latent infections with a case rate of 13.2 per 100,000. Of the 2,479 early syphilis cases reported in 2010, 81% were reported from seven counties (Table 1); these same counties also had the greatest number of infections the previous year.

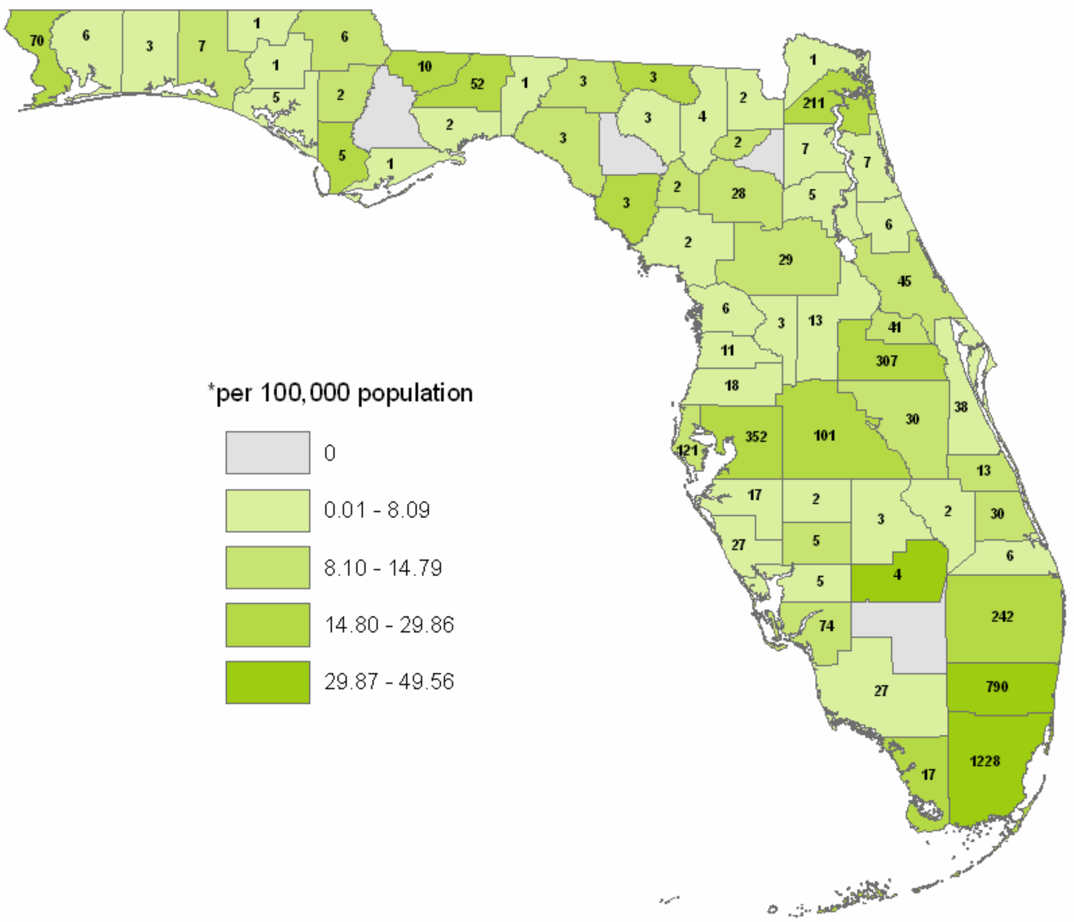
Table 1. Reported Cases of Total Early Syphilis by County for the Seven Most Frequent Counties, Florida, 2010

	Cases (#)	% of Morbidity	Rate/100,000
Miami-Dade	810	32.7	32.7
Broward	469	18.9	26.9
Hillsborough	200	8.1	16.7
Orange	192	7.7	17.3
Duval	131	5.3	14.6
Palm Beach	122	4.9	9.5
Pinellas	85	3.4	9.2

More than other reportable sexually transmitted diseases (STDs), syphilis is highly clustered geographically, mostly occurring in several southern counties and distinct urban areas throughout Florida. Twelve counties reported no cases of early syphilis and forty counties reported five or fewer cases of early syphilis.

One important subset of total early syphilis cases is infectious syphilis (primary and secondary stages). In 2010, infectious syphilis cases totaled 1,185 or 48% of total early syphilis. Of these cases, 88% were in men and 70% were in men who have sex with men (MSM). The ratio of male to female early syphilis cases was 5 to 1 overall, but differed among racial and ethnic groups. The male to female ratio among non-Hispanic blacks was 3 to 1, non-Hispanic whites 9 to 1, and Hispanics 10 to 1. The proportional gender differences between racial/ethnic groups indicated that early syphilis cases in non-Hispanic black populations were more evenly distributed between men and women. The overall male to female ratio for infectious syphilis was 10 to 1.

Total Syphilis Cases by County, Florida, 2010



In 2010, the distribution of early syphilis by race and ethnicity indicated that the disease disproportionately affected non-Hispanic blacks. Persons who self-reported as non-Hispanic black accounted for 39.2% of the early syphilis cases in 2010. However, this same group only accounts for 15% of the state's population. Persons who self reported as non-Hispanic white accounted for 31.9% of the cases. Persons who self-reported as Hispanic (white, black, or other) accounted for 25.4% of the cases. Persons who self-reported in other or unidentified racial and ethnic groups accounted for 1.4% of the cases. The rate for non-Hispanic blacks was 34.1 per 100,000 population. This rate was nearly twice as high as the second highest rate, in Hispanics (17.9 per 100,000 population), and four times greater than non-Hispanic whites (7.8 per 100,000 population).

Table 2. Reported Cases of Total Early Syphilis by Race and Ethnicity, by Gender and Sexual Preference, Florida, 2010

	Female	Non-MSM	MSM	Total
Black/African American (Non-Hispanic)	253	247	473	973
White Non-Hispanic	79	89	623	791
Hispanic	57	67	505	629
Other	7	9	19	35
Unknown	7	15	29	51
Total	403	427	1,649	2,479

The greatest proportion of early syphilis cases for females were reported in the 20-24 and 25-29 age groups, whereas male cases did not show as much difference between age groups (Table 3). Sixty-three percent of cases in females were reported in women aged <30 years, compared to 34% in males of the same age cohort.

Table 3. Reported Cases of Total Early Syphilis by Age, Gender, and Sexual Risk Factors, Florida, 2010

	MSM		Non-MSM Male		Female	
Age	#	%	#	%	#	%
10 – 14	0	-	0	-	2	0.5
15 – 19	77	4.7	35	8.2	67	16.6
20 – 24	245	14.8	69	16.2	117	29.1
25 – 29	217	13.2	62	14.5	69	17.2
30 – 34	210	12.7	48	11.3	41	10.2
35 – 39	199	12.1	49	11.5	26	6.5
40 – 44	263	15.9	42	9.9	15	3.7
45 – 54	358	21.7	69	16.2	53	13.2
55 – 64	72	4.4	32	7.5	9	2.2
65 – 74	8	0.5	14	3.3	2	0.5
75+	0	-	6	1.4	1	0.2
Total	1,649		426		402	

Despite elimination efforts, syphilis in recent years has been persistent in the MSM population. The distribution of early syphilis in this group differs in age, race, and ethnicity from heterosexual populations. Men who self-indentified as MSM accounted for 67% of the total early syphilis cases. Unlike in the heterosexual population, non-Hispanic white men (38%) and Hispanic men (31%) accounted for slightly greater percentages of the reported MSM cases than non-Hispanic black men (29%). The similar morbidity numbers across racial and ethnic groups is likely an indication of similar risk behavior trends in this population, regardless of race and ethnicity. Age also appears not to be a key predictor of infection as the morbidity is relatively evenly distributed. However, 61% of early syphilis infections in non-Hispanic blacks occurred in those aged <30 years while the greatest number of infections in non-Hispanic whites and Hispanics occurred in older men. Fifty-nine percent of MSM with early syphilis infections were also co-infected with Human Immunodeficiency Virus (HIV), the virus that causes AIDS, a vast difference from the 9.8% of co-infected heterosexual men and 8.4% of co-infected women.

Prevention

According to the Centers for Disease Control and Prevention (CDC), the surest way to avoid transmission of any STD is to abstain from sexual contact, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected. When used consistently and correctly, a latex condom can reduce the risk of transmission of syphilis. At the onset of a syphilis infection, the first symptom can last for 3 to 6 weeks and is usually a small, round, painless sore on the area of exposure (genitals, anus, or mouth). A rash may appear on the body after or while the sore is healing. The rash will typically occur on the palms of the hands and soles of the feet. Without treatment, these symptoms can subside but the infection will remain present in the body. Other signs and symptoms include patchy hair loss, weight loss, fatigue, muscle soreness, and headaches. Women and men who are told they have a syphilis infection and are treated for it should notify all of their recent sex partners (sex partners within the preceding 60 days) so they can see a health care provider and be evaluated for any possible STD exposure. Sexual activity should not resume until all sex partners have been examined and, if necessary, treated.

Condoms lubricated with spermicides (especially Nonoxynol-9 or N-9) are no more effective than other lubricated condoms in protecting against the transmission of STDs. Transmission of an STD, including syphilis cannot be prevented by washing the genitals, urinating, or douching after sex. Any unusual discharge, sore, or rash, particularly in the groin area, should be a signal to refrain from having sex and to see a doctor immediately.

References

Centers for Disease Control and Prevention. STDs & Pregnancy - CDC Fact Sheet. Atlanta, GA: U.S. Department of Health and Human Services, March 2011.

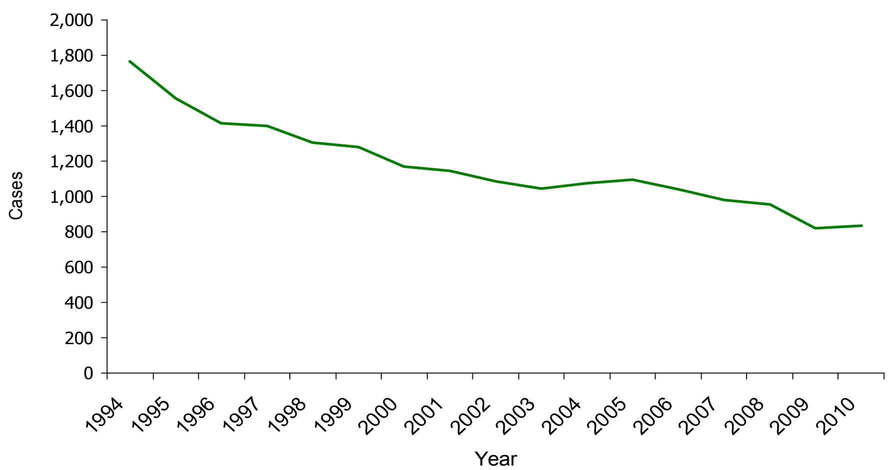
Tuberculosis

Disease Abstract

Tuberculosis (TB) is an infectious disease, mostly respiratory, caused by the bacterium *Mycobacterium tuberculosis.* This disease is spread by aerosolized droplets from people with active TB. Each year there are over nine million infections and 1.7 million deaths caused by the disease worldwide. Only 10% of healthy individuals infected with TB bacteria will ever get the active form of the disease. However, this risk increases dramatically with specific risk factors and co-morbid conditions.

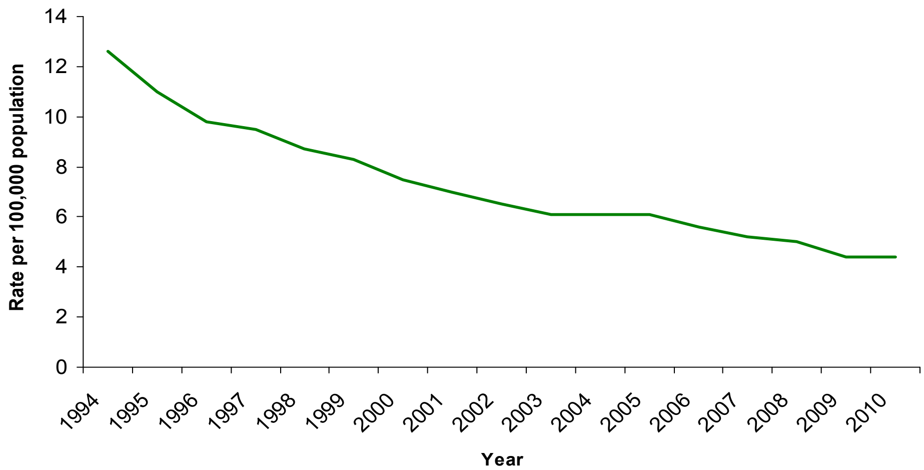
In 2010, 821 tuberculosis cases were reported in Florida (Figure 1). This represents a 1.6% increase in cases since 2009 (822). The TB case rate remained the same at 4.4 per 100,000 population in 2009 and in 2010 (Figure 2).

Figure 1. Tuberculosis Cases by Year, Florida, 1994-2010



Source: Tuberculosis Information Management System (TIMS);
Health Management System (HMS)-2009-2010 data only.

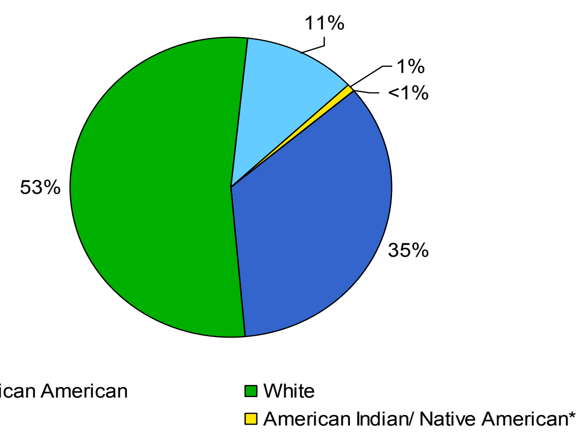
Figure 2. Tuberculosis Rates by Year, Florida, 1994-2010



Source: TIMS and HMS (2009 and 2010 data)
Population estimates from Florida CHARTS

Medically underserved and low-income populations, including racial and ethnic minorities such as blacks, Hispanics, and Asians, have high rates of TB exposure and infection. These populations are disproportionately represented among reported people with TB in Florida. This is partly due to immigration from countries where TB is more common. Out of 835 cases reported for 2010, 53% were white, 35% were black or African American, and 11% were Asian. American Indian/Alaskan Native and Pacific Islander/Native Hawaiian combined accounted for 1%, and the Other category comprised <1% (Figure 3). Thirty percent of reported cases were Hispanic and 70% were non-Hispanic.

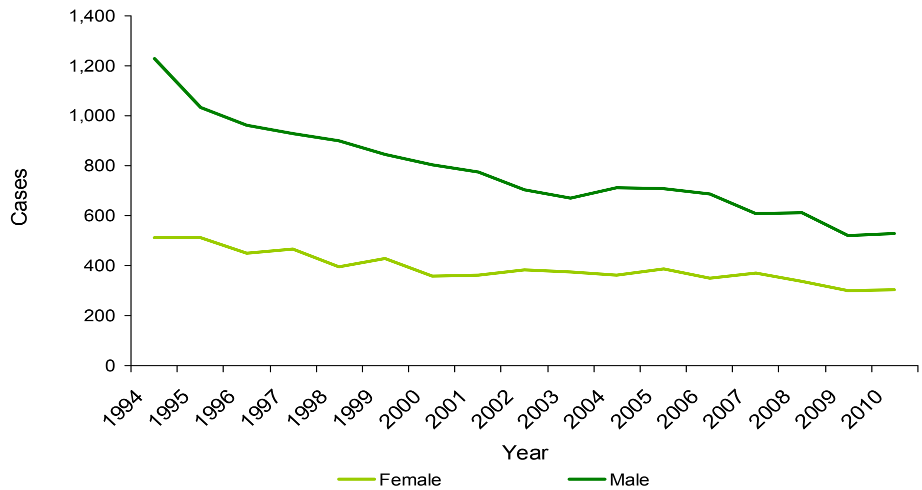
Figure 3. Tuberculosis Cases by Race, Florida, 2010



Source: HMS
Persons reporting to be American Indian (AI)/Alaska Native (AN) includes those who are Pacific Islander/Native Hawaiian (PI/NH).

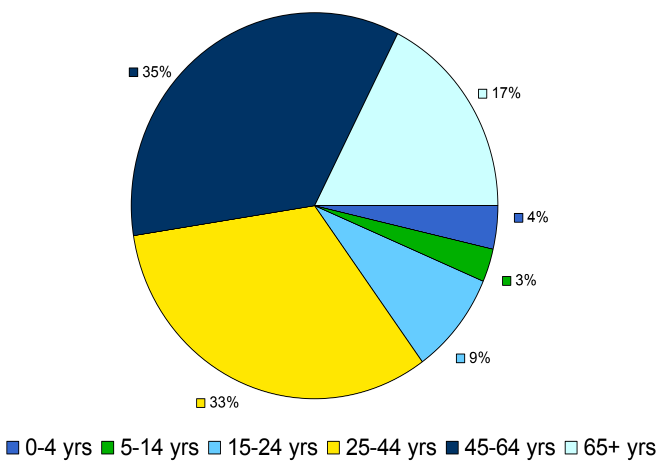
The number of TB cases has decreased overall since 1994. In 2010, there were 531 cases in males and 304 cases in females (Figure 4). The largest proportion of cases is in those aged 45-64 years followed by those aged 25-44 years (Figure 5).

Figure 4. Tuberculosis Cases by Gender, Florida, 2010



Source: TIMS and HMS (2009 and 2010)

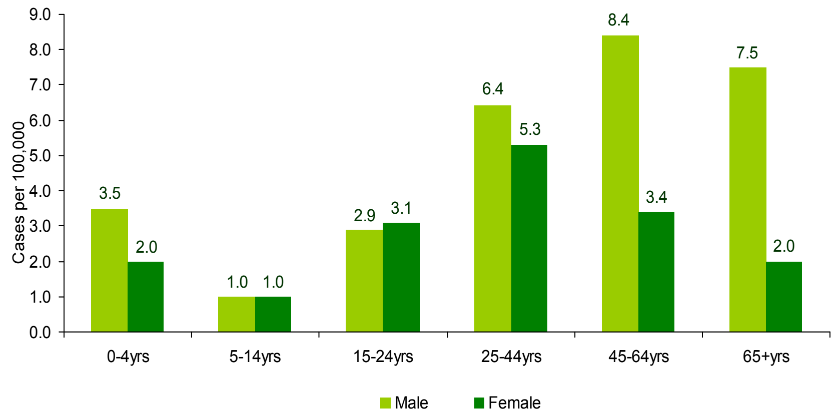
Figure 5. Tuberculosis Cases by Age Group, Florida, 2010



Source: HMS
Percentages have been rounded and may not equal 100%.

Males have a higher case rate than females for all age groups except in the 5-14 year old age group, where males and females are equal at 1.0 case per 100,000 population, and in the 15-24 year age group, where men had 2.9 cases per 100,000 population and women had 3.1. The aged 65 and over group showed the greatest difference between genders with a rate of 7.5 cases per 100,000 population in men and 2.0 in women (Figure 6).

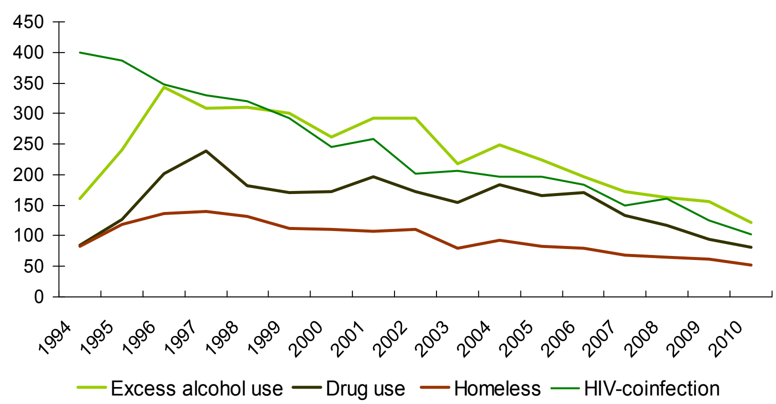
Figure 6. Tuberculosis Cases by Age Group and Gender, Florida, 2010



Rates are per 100,000 population.
Population estimates from Florida CHARTS

The risk factors associated with having TB disease from 1994-2010 were: excess alcohol use (within a year of TB diagnosis), drug use (within a year of TB diagnosis), homelessness (within a year of TB diagnosis), and HIV co-infection. In 2010, there were 122 cases where excess alcohol use was a risk factor. Drug use was reported in 82 cases, homelessness in 52 cases, and HIV co-infection was reported in 103 cases. Please note: multiple risk factors can be reported for a case and not all cases will have these risk factors (Figure 7).

Figure 7. Tuberculosis Cases with Selected Risk Factors, Florida, 2010

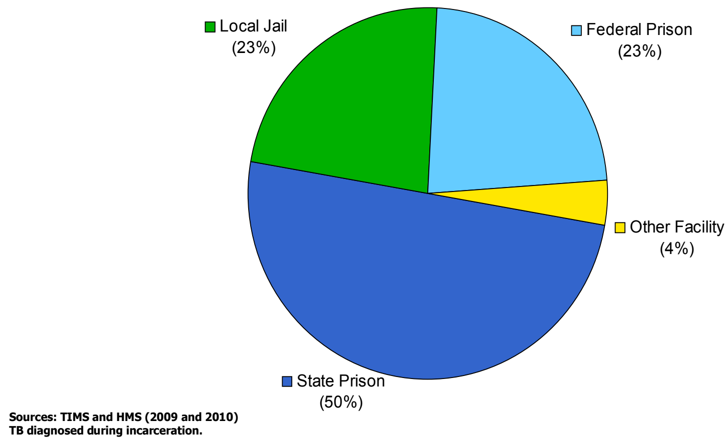


Sources: TIMS and HMS (2009 and 2010)
Patient reported condition of substance abuse and/or homelessness within 1 year of TB diagnosis.

Effective TB prevention and control within correctional settings are essential elements to protecting the health of inmates, staff, and the community. However, responsibility for care must be transferred to the county health department in order to ensure adherence to treatment once inmates are released back into the community with active TB disease or infection. Failure to complete treatment could lead to acquiring multi-drug resistance to TB medications, developing active TB disease, or exposing the general community to possible TB infection.

There were 26 TB cases in people residing in correctional facilities in 2010. Fifty percent of the cases were from state prisons, 23% were from local jails, 23% were from federal prisons, and the remaining 4% came from other detainment facilities (Figure 8).

Figure 8. Tuberculosis Cases in Correctional Facilities, by Facility Type, Florida, 2010



The number of reported cases in U.S.-born persons decreased from 1,277 cases in 1994 to 416 cases in 2010 (Figure 9). Of the 419 foreign-born persons with TB, Haiti was the country of birth for 24% (100) and Mexico was identified for 15% (62). All other countries combined accounted for 61% of the foreign-born cases.

Figure 9. Trends in Tuberculosis Cases in U.S.-born and Foreign-born Persons, Florida, 1994-2010

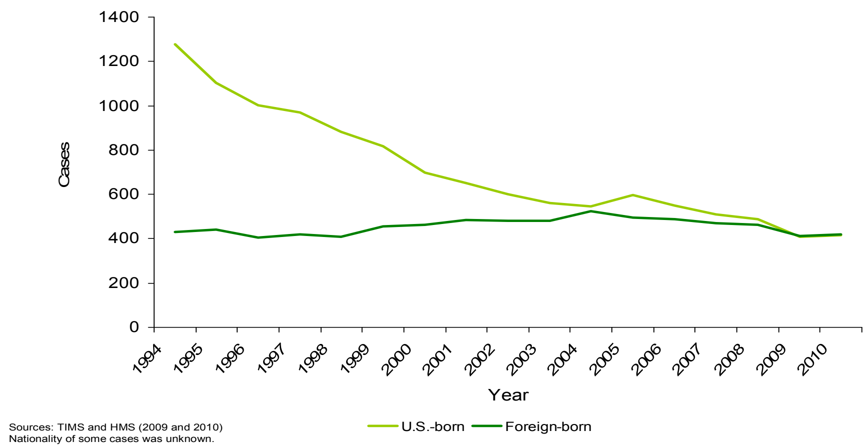
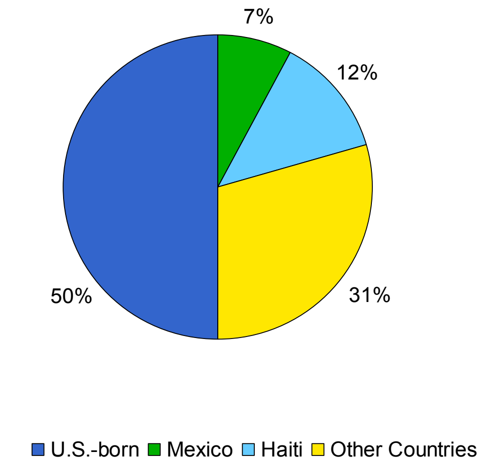


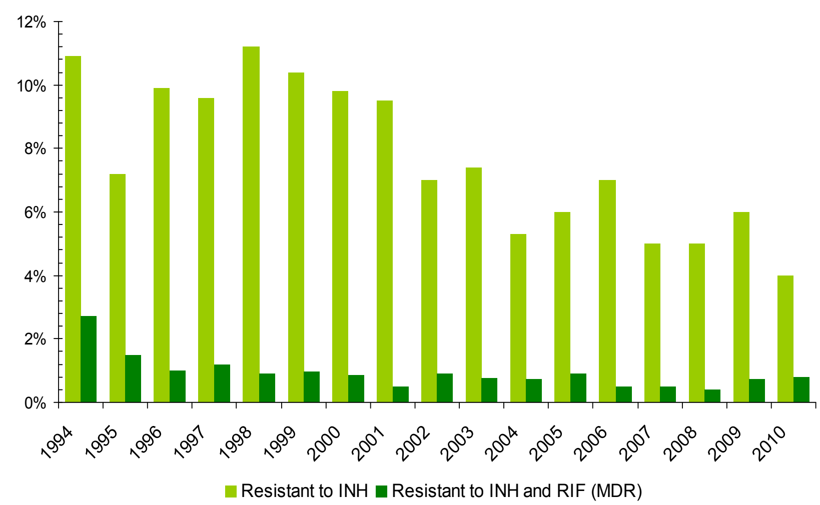
Figure 10. Tuberculosis Cases by Country of Birth, Florida, 2010



Source: HMS

Figure 11 displays the percentage of TB cases whose isolates are resistant to isoniazid (INH) alone and to both INH and rifampin (RIF) from 1994 to 2010. The percentage of INH resistance in 2010 was at 4%. The percentage of resistance to both INH and RIF, also known as multi-drug resistance (MDR), was 0.8%.

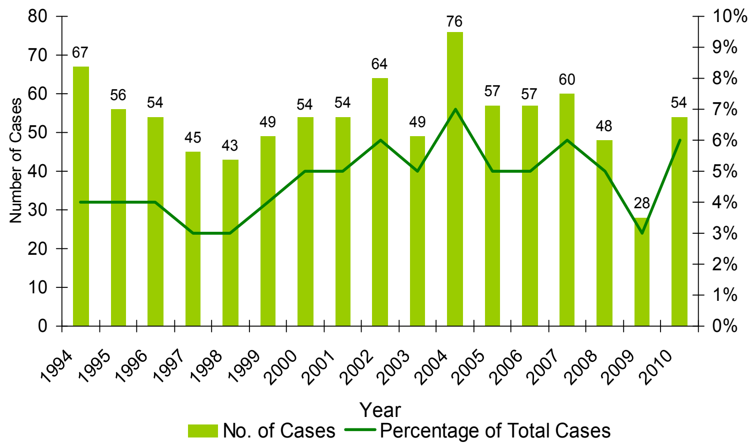
Figure 11. Percentage of Tuberculosis Cases with Drug Resistant Organisms* by Year, Florida, 1994-2010



Sources: TIMS and HMS (2009-2010)
***Based on initial drug susceptibility testing**
INH- isoniazid, RIF- rifampin, MDR- multi-drug resistance

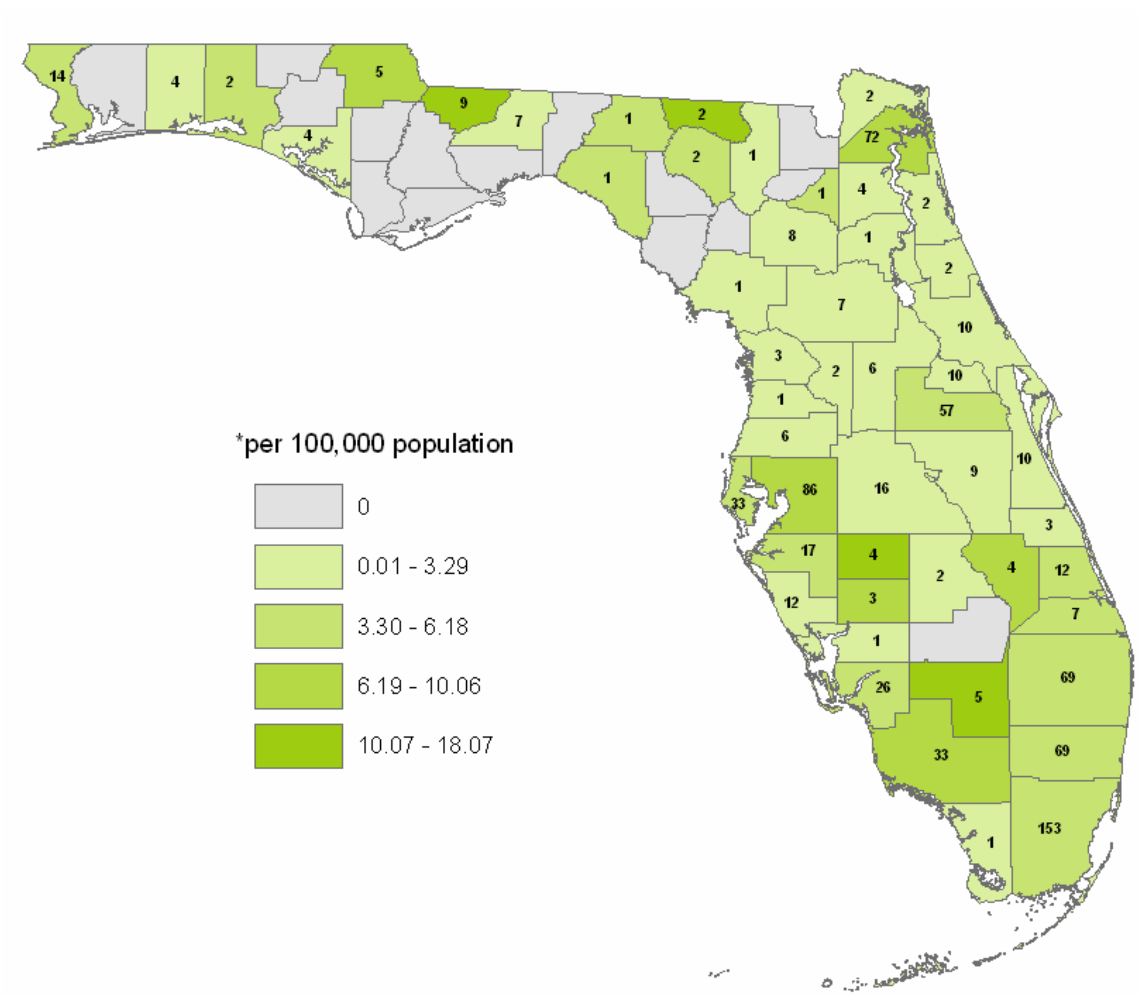
There were 67 children (0-14 years of age) with TB in Florida in 1994 and 54 in 2010 (Figure 12). The number of cases in children has fluctuated from 1994 to 2010 with the highest number reported in 2004 and the lowest number reported in 2009.

Figure 12. Pediatric Tuberculosis, Florida, 1994-2010



Sources: TIMS and HMS (2009 and 2010)
Pediatric = 0-14 years of age
Percentages have been rounded and may not equal 100%

Tuberculosis Cases and Rate*, Florida, 2010



References

Centers for Disease Control and Prevention (CDC), Tuberculosis Fact Sheet, accessed at: http://www.cdc.gov/tb/.

National Institute of Allergies and Infectious Diseases, Tuberculosis Fact Sheet, accessed at: http://www.niaid.nih.gov/topics/tuberculosis/understanding/Pages/Default.aspx.

American Thoracic Society, Tuberculosis Fact Sheet, accessed at: http://www.thoracic.org/.

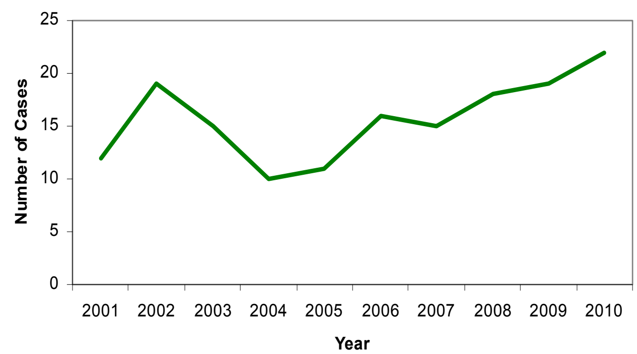
Additional Resource

Florida Department of Health, Bureau of Tuberculosis and Refugee Health website at: http://www.doh.state.fl.us/disease_ctrl/tb/.

Typhoid Fever

Typhoid Fever: Crude Data	
Number of Cases	22
2010 incidence rate per 100,000	0.1
% change from average 5 year (2005-2009) reported cases	39.2%
Age (yrs)	
Mean	24.6
Median	23.5
Min-Max	2 - 73

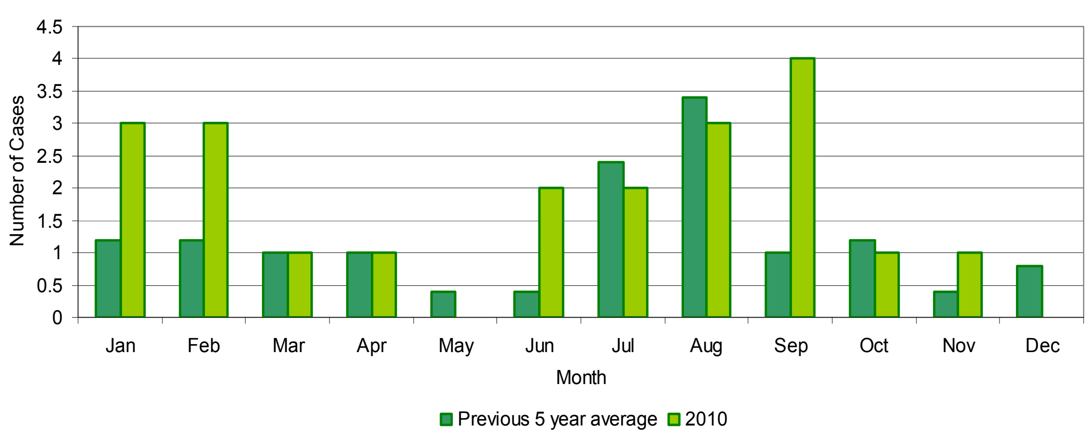
Figure 1. Typhoid Fever Cases by Year Reported, Florida, 2001-2010



Disease Abstract

Typhoid fever is a systemic illness caused by the bacterium *Salmonella* Typhi. The number of confirmed cases of typhoid fever for the last 10 years has ranged from 10 to 22 annually. In 2010, 22 cases were reported, representing an annual incidence rate of 0.1 per 100,000. This was a 39.2% increase from the average annual number of reported cases in the previous five years (Figure 1). One 2010 case was classified as probable, the remaining 21 cases as confirmed. The median age was 23.5. Over the past five years, and consistent with national data, the majority of Florida cases (66-95%) were acquired outside the U.S. In 2010, the majority of Florida cases were imported from India (55%) and Haiti (32%). The counties reporting the greatest number of cases were Broward, Miami-Dade, Orange, and Manatee. Cases typically occur more frequently in the summer months, with a September peak in 2010. Cases tend to be isolated, rather than clustered. However, three of the four cases that occurred in September of 2010 were in students attending a soccer academy in India during monsoon season, which created flooding and unsanitary conditions. In 2010, seven cases were imported from Haiti, compared to only three cases in 2009. This higher number may be due to increased travel between Haiti and Florida following a large earthquake on January 12, 2010.

Figure 2. Typhoid Fever Cases by Month of Onset, Florida, 2010



Prevention

Prevention is accomplished through proper sanitation, safe food handling practices, and appropriate case management. This includes the use of the following methods:

- Wash your hands thoroughly.
- Dispose of human waste products appropriately.
- Maintain safe and purified water supplies.
- Control insects.
- Use appropriate refrigeration.
- Maintain cleanliness when preparing food in both home and commercial settings.
- Make sure cases are treated promptly and effectively.
- Assure that people with untreated cases do not expose others, for example as food-handlers.

In endemic areas, prevention measures should include drinking bottled or carbonated water, cooking foods thoroughly, peeling raw fruits and vegetables, and in general, avoiding food or drink from street vendors. Immunization is recommended only for those with occupational exposure to enteric infections or for those traveling or living in endemic, high-risk areas.

Additional Resources

Disease information is available from the CDC at:
http://www.cdc.gov/nczved/divisions/dfbmd/diseases/typhoid_fever/.

Varicella

Varicella: Crude Data	
Number of Cases	977
2010 incidence rate per 100,000	5.2
% change from average 5 year (2005-2009) reported incidence rate	N/A
Age (yrs)	
Mean	13.4
Median	9
Min-Max	0 - 86

Disease Abstract

In 2007, the first full year of varicella case reporting in Florida, 1,321 cases were reported. The 977 cases reported in 2010 include both confirmed and probable cases. Of these cases, 554 had a history of vaccination recorded. April 2010 was the peak month of reported cases (Figure 1). The majority of cases in 2010 occurred in children aged <15 years (Figure 2). There were 277 outbreak-associated cases in 24 counties. Childcare centers and schools are the most common sites for varicella outbreaks.

Figure 1. Varicella Cases by Month of Onset, Florida, 2010

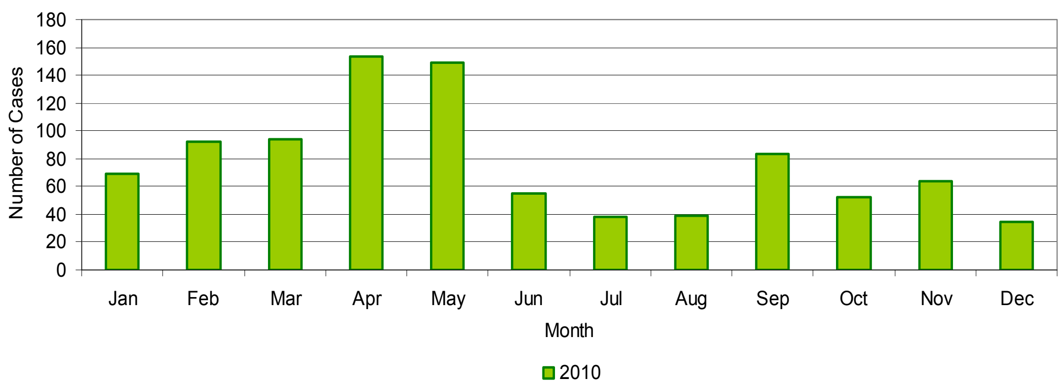
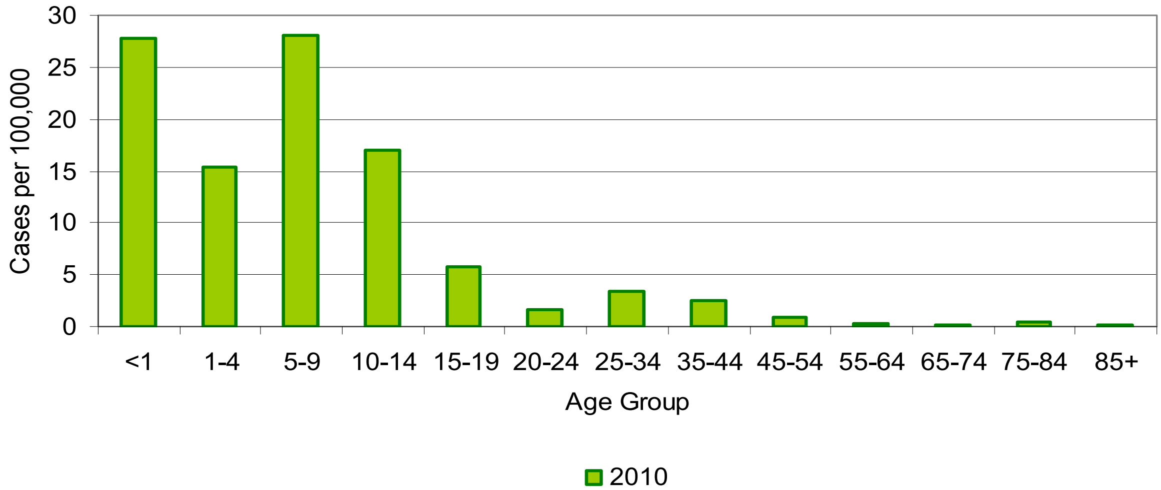
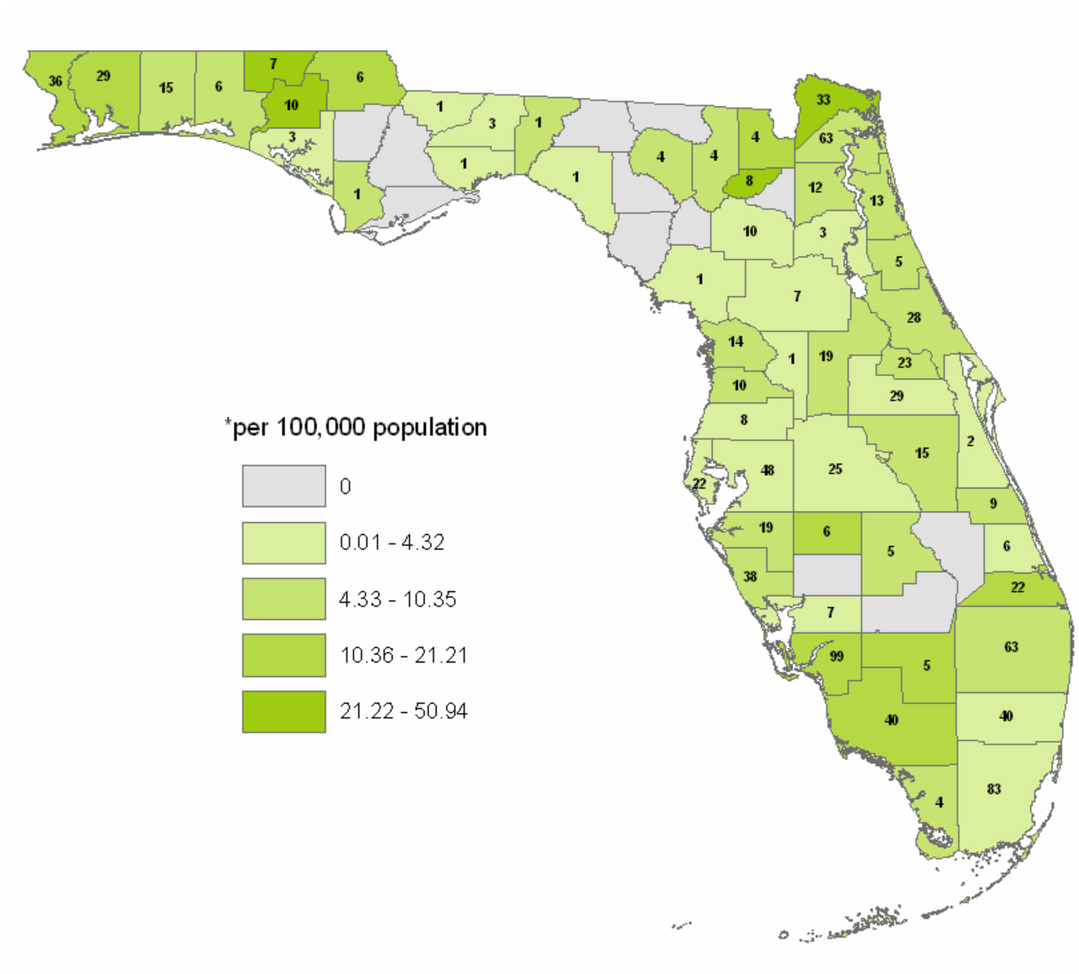


Figure 2. Varicella Incidence Rate by Age Group, Florida, 2010



Varicella was reported in 55 of the 67 Florida counties (Figure 3).

Figure 3. Varicella Cases and Incidence Rates* by County, Florida, 2010



Prevention
The varicella vaccine is recommended at age 12 to 15 months and at age four to six years. Doses given prior to age 13 years should be separated by at least three months. Doses given after age 13 years should be separated by at least four weeks. Due to the occurrence of disease after one dose of vaccine, the current recommendation is for two doses of vaccine. Proof of varicella vaccination or healthcare provider documentation of disease is required for entry and attendance in childcare facilities, family daycare homes, and schools for certain grades.

The U.S. Advisory Committee on Immunization Practices (ACIP) recommends varicella vaccine for susceptible persons following exposure to a case of varicella infection. If administered within 72 hours, and possibly up to 120 hours following varicella exposure, varicella vaccine may prevent or significantly modify the disease. Post-exposure vaccine use should be considered following exposures in healthcare settings, where transmission risk should be minimized at all times, and in households. If exposure to varicella does not cause infection, post-exposure vaccination with varicella vaccine should induce protection against subsequent infection. If exposure results in infection, the vaccine may reduce the severity of the disease.

Varicella zoster immune globulin (VZIG or VariZIG) is recommended for post-exposure prophylaxis of susceptible persons who are at high risk for developing severe disease when varicella vaccine is contraindicated. VZIG is most effective in preventing varicella infection when given within 96 hours of exposure. An investigational (not licensed) product, VariZIG, became available in February 2006 under an investigational new drug (IND) application submitted to the Food and Drug Administration after the only U.S. licensed manufacturer of VZIG announced it had discontinued production.

References
Centers for Disease Control and Prevention, *Manual for the Surveillance of Vaccine-Preventable Diseases,* 4th ed., 2008, chapter 17.

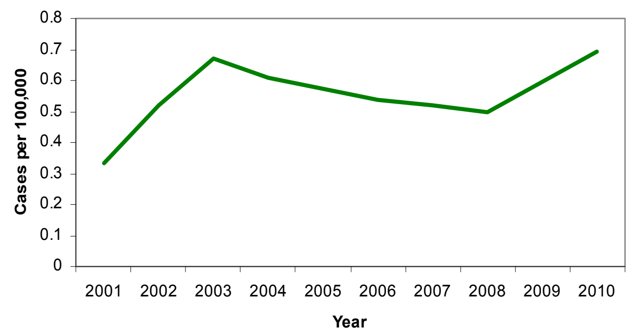
Additional Resources
Disease information is available from the CDC at: www.cdc.gov/vaccines/vpdvac/varicella/default.htm.

Recommended immunization schedule is available at: http://www.cdc.gov/vaccines/recs/schedules/default.htm.

Vibriosis

Vibriosis: Crude Data	
Number of Cases	130
2010 incidence rate per 100,000	0.7
% change from average 5 year (2005-2009) reported incidence rate	27.1%
Age (yrs)	
Mean	44.4
Median	47.5
Min-Max	2 - 109

Figure 1. Vibriosis Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The genus *Vibrio* consists of many species of Gram-negative, curved, motile rods, and includes about a dozen species known to cause human illness. Transmission occurs primarily through the foodborne route, and in Florida infection with *Vibrio* occurs principally from eating raw or undercooked shellfish. Transmission can also occur through contact of broken skin with seawater where *Vibrio* species are endemic, which includes the coastal areas of the Gulf of Mexico. Clinical manifestations vary depending on the infecting *Vibrio* species. The species of greatest public health concern in Florida are *V. vulnificus* and *V. parahaemolyticus*. This report combines data on *Vibrio* infections (excluding cholera, which is described separately) to provide a general description of the disease burden.

Figure 2. Vibriosis Cases by Month of Onset, Florida, 2010

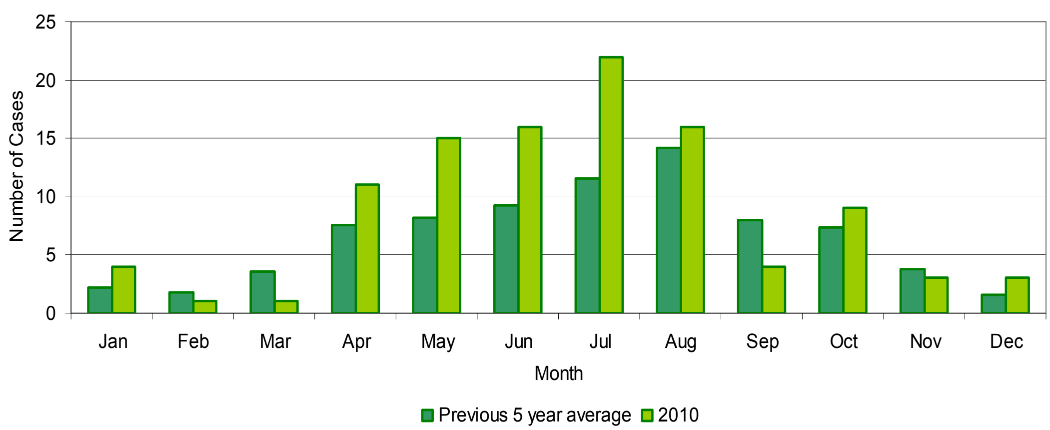
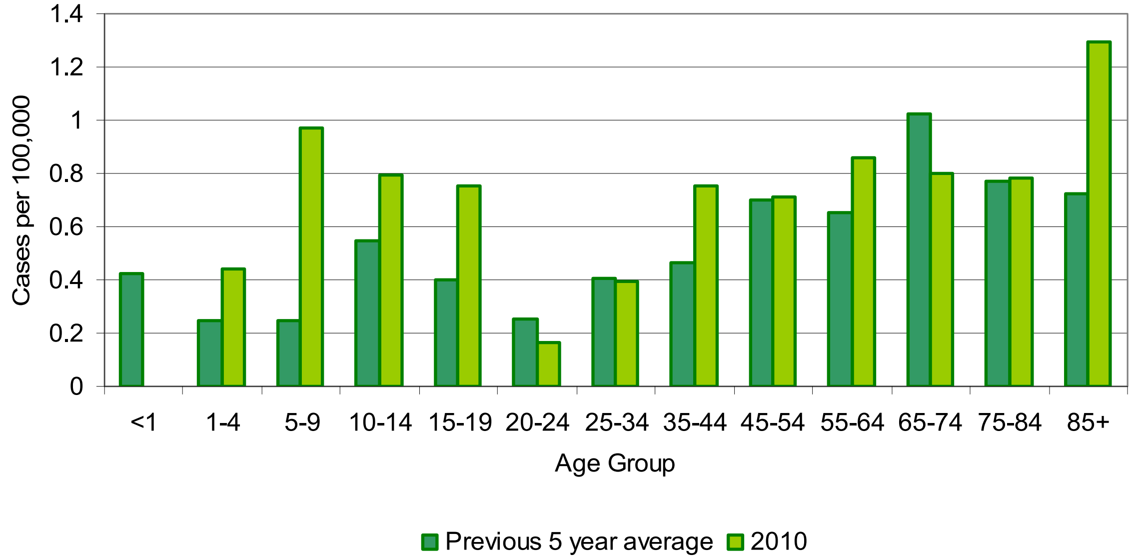


Figure 3. Vibriosis Incidence Rate by Age Group, Florida, 2010

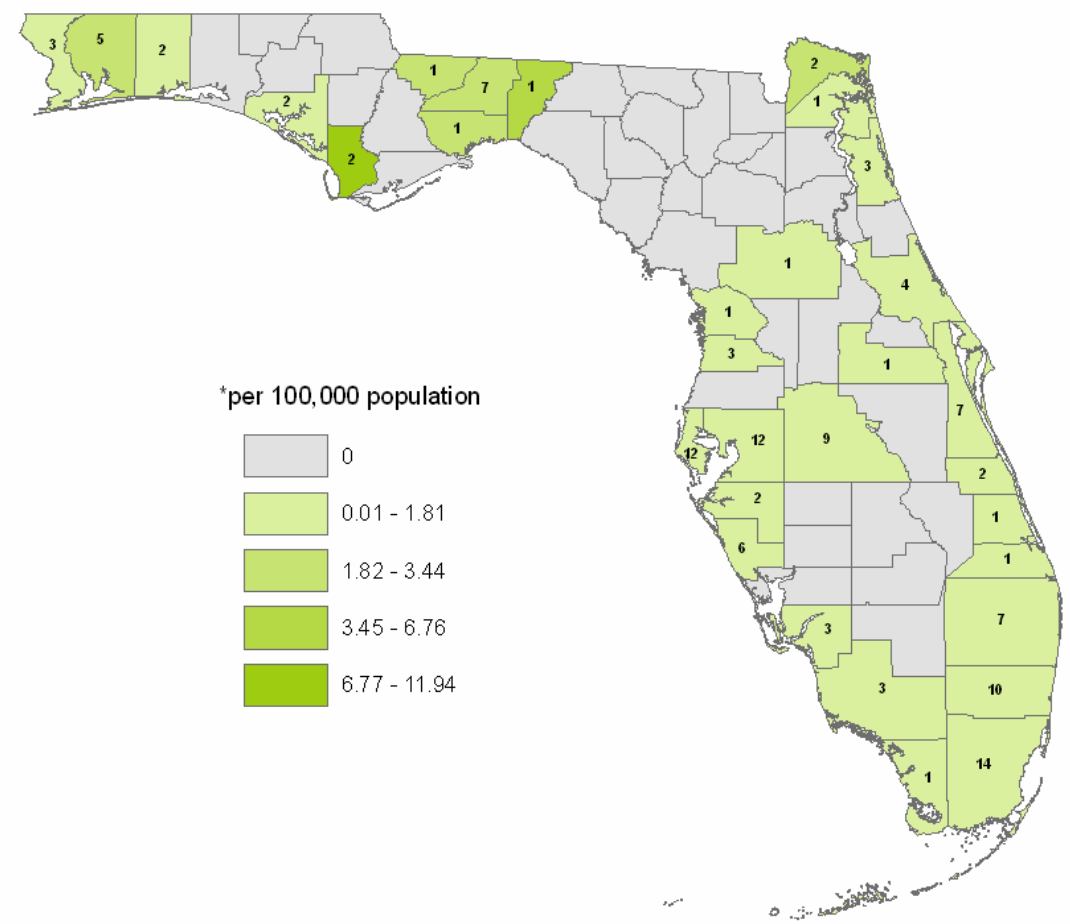


In comparison to the previous average five-year incidence, the incidence for *Vibrio* infections in 2010 increased (27.1%) (Figure 1). In 2010, 130 Florida residents were reported and confirmed as cases. The majority of cases (127) were acquired in Florida, two were acquired in the U.S. outside of Florida, and one case had an unknown exposure. *Vibrio* infections typically increase during the warmer months. In 2010, 87 cases (62%) occurred from April to October (Figure 2).

There are consistently high incidence rates among individuals aged >45 years with a historical peak incidence occurring in the 65 to 74 age group (1.03 per 100,000 population) (Figure 3). This is a population that is likely to have chronic conditions that predispose them to these infections. However, in 2010, there was a relatively high incidence rate among those aged 5 to 19 years.

Vibrio cases were reported in 34 of the 67 counties in Florida in 2010 (Figure 4). The higher-incidence counties are found along the coasts.

Figure 4. Vibriosis Cases and Incidence Rates* by County, Florida, 2010



Vibrio vulnificus infections

Vibrio vulnificus infections typically manifest as septicemia in persons who have chronic liver disease, chronic alcoholism, or are immuno-compromised. *V. vulnificus* infections can lead to severe outcomes including death. *V. vulnificus* infections are commonly associated with the consumption of raw oysters, although the bacteria can also infect wounds exposed to coastal or marine waters or raw seafood juices. Of the vibriosis cases reported in 2010, 32 were determined to be *V. vulnificus*. Of the 32 reported *V. vulnificus* cases, 19 were wound infections (one death) and eight were attributed to oyster consumption (four deaths). Exposure was unknown in five of the cases (four deaths).

Vibrio parahaemolyticus infections

Vibrio parahaemolyticus infections typically manifest as gastrointestinal disorders with symptoms of diarrhea, abdominal pain, nausea, fever, and headache. It is commonly associated with the consumption of raw oysters and is also associated with the consumption of cross-contaminated crustacean shellfish (crab, shrimp, and lobster). *V. parahaemolyticus* can also cause wound infections when broken skin is exposed to seawater where *V. parahaemolyticus* is endemic. Of the vibriosis cases reported in 2010, 37 were *V. parahaemolyticus*. Of these 37 cases, 12 were wound infections, seven were attributed to oyster consumption, and exposure was unknown in eight of the cases. No deaths from *V. parahaemolyticus* infection were reported.

Vibrio alginolyticus infections

Vibrio alginolyticus infections typically present as self-limited wound infections and ear infections. Septicemia and death have been reported in immunocompromised individuals and burn patients. Infection is commonly associated with exposure to seawater. Of the vibriosis cases reported in 2010, 38 were *V. alginolyticus.* Of these 38 cases, 23 were wound infections and 11 were reported ear infections. No deaths from *V. alginolyticus* were reported.

Vibrio cholerae, non-O1 infections

During the 2010 calendar year there were a total of five *Vibrio cholerae* infections due to non-O1 and non-O139 strains reported in different counties across Florida. Case interviews revealed that four of the cases had their exposure in Florida and three were associated with raw or steamed oyster consumption. One of those cases, a boy aged 12 years, was confirmed to have *Vibrio cholerae* O75 five days after consuming raw oysters in October. The child recovered after being hospitalized for two days. Strain O75 has become an emerging concern due to its production of cholera toxin, which is not typical for non-O1 strains.

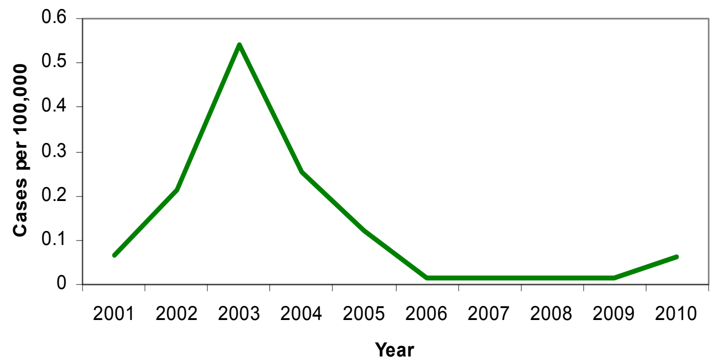
Additional Resources

Disease information is available from the Centers for Disease Control and Prevention (CDC) at: http://www.cdc.gov/nczved/divisions/dfbmd/.

West Nile Virus Disease

West Nile Virus Disease: Crude Data	
Number of Cases	12
2010 incidence rate per 100,000	0.06
% change from average 5 year (2005-2009) reported incidence rate	71.4%
Age (yrs)	
Mean	48.0
Median	49
Min-Max	7 - 82

Figure 1. West Nile Virus Disease Incidence Rate by Year Reported, Florida, 2001-2010



Disease Abstract

The incidence rate for West Nile virus (WNV) disease peaked in Florida in 2003. It remained stable and near zero from 2006 until 2010, (Figure 1). In 2010, there were twelve locally-acquired human cases, nine confirmed and three probable. Nine cases were classified as neuroinvasive disease and three as fever (not neuroinvasive). One laboratory positive asymptomatic blood donor was also reported in Brevard County.

Ages of cases in 2010 ranged from 7 to 82 years, with a median age of 49 years. Although three cases in 2010 involved persons aged <20 years, most cases (75%) were those aged 35 years and older as typically seen in the past (Figure 3). Two cases involving men aged 80 and 82 years were fatal. Nine (75%) of the cases were male and three (25%) female. Race was primarily white and non-Hispanic with 83% of cases being white, 8% black, 8% other, and 92% non-Hispanic compared with 8% Hispanic.

In 2010, activity was reported from July to October with activity peaking in July (2), August (4), September (3), and October (3). This is slightly later than WNV activity seen in the past five years, but is more typical of temporal distributions seen during earlier epidemic years (Figure 2 and 2006 Florida Statistics Morbidity Report). Nine of the cases reported no or rare use of mosquito repellant and three reported using repellant sometimes. Five of the 12 were smokers, most of who were known to have smoked outside. One case did not have window screens, and four cases had underlying medical conditions, including the two fatal cases.

The level of virus transmission between bird and mosquito populations is dependent on a number of environmental factors. Drought conditions that persisted from 2006 to 2009 across most of the state may have contributed to the previous decrease in cases. Population immunity may also play a role. West Nile virus transmission tends to be localized from year-to-year in Florida. In 2001, the epicenter of the WNV outbreak was in the north-central part of the state. The following year, activity was most intense in the northwestern and central counties. The focus in 2003 was the panhandle, while south Florida had the most activity in 2004. In 2005, 86% of the human cases were in Pinellas County. Most exposures in 2010 occurred in counties located in the central and south part of the state. Cases were reported in Osceola, Orange (2), Collier (2), Broward, Duval, De Soto, Lee, Suwannee (exposure believed to be in south Florida), Brevard, and Highlands counties.

Figure 2. West Nile Virus Disease Cases by Month of Onset, Florida, 2010

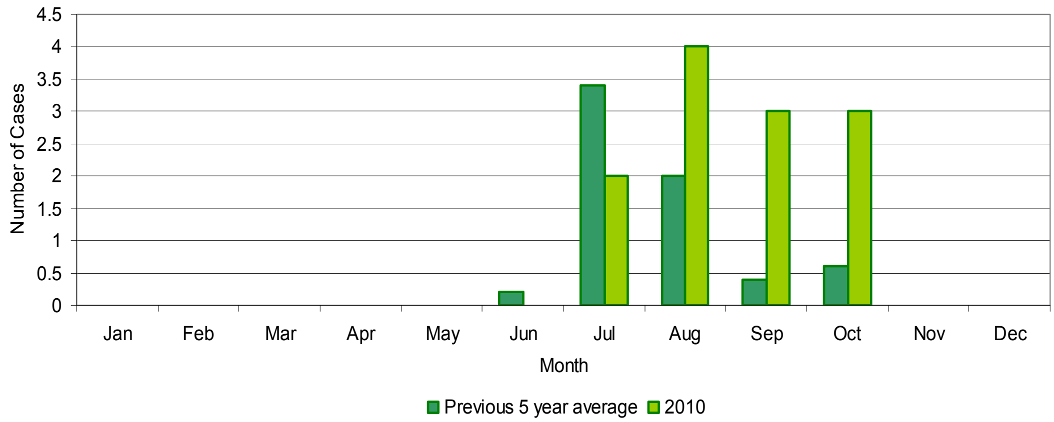
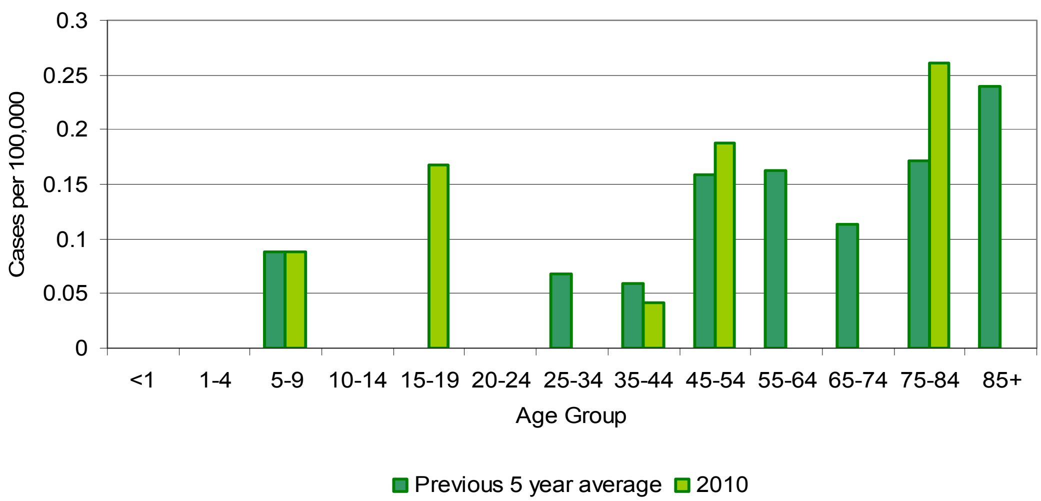


Figure 3. West Nile Virus Disease Incidence Rate by Age Group, Florida, 2010



In general, approximately 80% of those infected show no clinical symptoms. Twenty percent have mild symptoms, and less than 1% experiences the most severe neuro-invasive form of illness. People over the age of 50 years seem to be at increased risk for neuroinvasive disease and more severe outcomes. In Florida, case-fatality ratios range from 4% for all cases to 7% among those who develop the neuroinvasive form of the disease, although the fatality rate for neuroinvasive disease was 22% in 2010. Interestingly, activity of a related virus, St. Louis encephalitis (SLE) virus, has decreased dramatically since WNV was first detected in the state in 2001. Research suggests that in wild bird species that may act as reservoirs, antibodies for WNV may protect against SLE virus infection.

Prevention

There is no specific treatment for WNV disease, and therapy is supportive for ill people; prevention is a necessity. Measures that should be taken to avoid being bitten by mosquitoes include the following tips:

DRAIN standing water to stop mosquitoes from multiplying:

- Drain water from garbage cans, house gutters, buckets, pool covers, coolers, toys, flower pots or any other containers where sprinkler or rain water has collected.
- Discard old tires, drums, bottles, cans, pots and pans, broken appliances and other items that aren't being used.
- Empty and clean birdbaths and pet's water bowls at least once or twice a week.
- Protect boats and vehicles from rain with tarps that don't accumulate water.
- Maintain swimming pools in good condition and appropriately chlorinated. Empty plastic swimming pools when not in use.

COVER skin with clothing or repellent:

- CLOTHING - Wear shoes, socks, and long pants and long-sleeves. This type of protection may be necessary for people who must work in areas where mosquitoes are present.
- REPELLENT - Apply mosquito repellent to bare skin and clothing.
  - Always use repellents according to the label. Repellents with DEET, picaridin, oil of lemon eucalyptus, and IR3535 are effective.
  - Use mosquito netting to protect children younger than 2 months old.

COVER doors and windows with screens to keep mosquitoes out of your house:

- Repair broken screening on windows, doors, porches, and patios.

References

Fang Y, Reisen WK, "Previous Infection with West Nile or St. Louis Encephalitis Viruses Provides Cross Protection During Reinfection in House Finches," *Am J Trop Med Hyg*. 2006, 75 (3):480-5.

Ottendorfer CL, Ambrose JL, White GS, "Isolation of Genotype V St. Louis Encephalitis Virus in Florida," *Emerg Infect Dis.,* 2009, 15 (4):604-06.

Additional Resources

Additional information on WNV disease and other mosquito-borne diseases can be found in the *Surveillance and Control of Mosquito-borne Diseases in Florida Guidebook*, online at: http://www.doh.state.fl.us/Environment/medicine/arboviral/2009MosquitoGuide.pdf.

Disease information is also available from the Centers for Disease Control and Prevention at: http://www.cdc.gov/ncidod/dvbid/westnile/index.htm.

Section 3

Foodborne Disease Outbreaks

Description
Foodborne disease investigation and surveillance are essential public health activities. Globalization of the food supply, changes in eating habits and behaviors, and newly emerging pathogens have impacted the risk of contracting foodborne diseases. The Centers for Disease Control and Prevention (CDC) estimates foodborne diseases from unspecified agents account for approximately 38.4 million illnesses, 71,878 hospitalizations, and 1,686 deaths per year in the U.S. An additional estimated 9.4 million illnesses, 55,961 hospitalizations, and 1,351 deaths are accounted for by confirmed foodborne pathogens. Florida has had a unique program in place since 1994 to oversee food and waterborne disease surveillance and investigation for the state with the intent to better capture and investigate food and waterborne diseases, complaints and outbreaks, as well as to increase knowledge and prevent illness with regard to this important public health issue.

Foodborne disease outbreaks, as defined by the Florida Department of Health's Food and Waterborne Disease Program, are incidents in which two or more people have the same disease, have similar symptoms, or excrete the same pathogens; and there is a person, place, and/or time association between these people along with ingestion of a common food. A single case of suspected botulism, mushroom poisoning, ciguatera or paralytic shellfish poisoning, other rare disease, or a case of a disease that can be definitively linked to ingestion of a food, is considered an incident of foodborne illness and warrants further investigation.

Overview
In 2010, Florida reported 64 foodborne disease outbreaks with 805 associated cases. (Table 1).

Table 1. Summary of Foodborne Disease Outbreaks, Florida, 2000-2009

Year	Number of Outbreaks	Number of Cases	Proportion of Outbreaks per 100,000 Population	Proportion of Cases per 100,000 Population	Average Cases per Outbreak
2001	290	1,921	1.77	11.70	6.62
2002	237	1,443	1.41	8.60	6.09
2003	185	1,564	1.08	9.11	8.45
2004	173	1,911	0.98	10.85	11.05
2005	128	1,944	0.71	10.79	15.19
2006	142	1,141	0.77	6.19	8.04
2007	122	852	0.65	4.55	6.98
2008	96	1,218	0.51	6.45	12.69
2009	65	715	0.35	3.80	11.00
2010	64	805	0.34	4.28	12.58

Trends
Over the last 10 years there has been a general decreasing trend in the total number of reported foodborne disease outbreaks and number of reported foodborne disease outbreaks per 100,000 population in Florida (Figures 1 and 2).

Figure 1. Total Number of Reported Foodborne Disease Outbreaks, Florida, 2001-2010

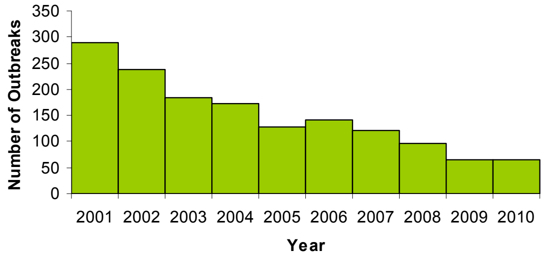
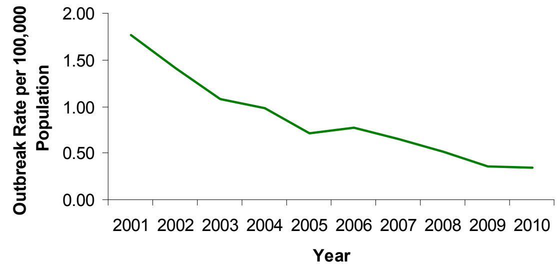


Figure 2. Number of Reported Foodborne Disease Outbreaks per 100,000 Population, Florida, 2001-2010



Over the last 10 years, the number of reported foodborne illness cases and the incidence per 100,000 population has declined (Figures 3 and 4).

Figure 3. Total Number of Reported Foodborne Disease Outbreak-Related Cases, Florida, 2001-2010

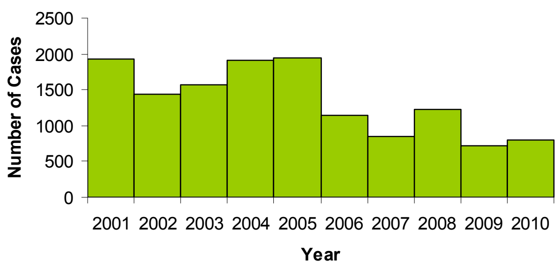


Figure 4. Average Number of Reported Foodborne Outbreak-Related Cases per 100,000 Population, Florida, 2001-2010

Seasonality

There was no seasonality trend in reported outbreaks. March had the highest number of outbreaks (N=10) and May the lowest (N=1) (Figure 5). Similarly there was no trend in the number of outbreak related cases reported monthly with the highest number of cases (N=130) reported in November (Figure 6).

Figure 5. Total Number of Reported Foodborne Disease Outbreaks by Month, Florida, 2010

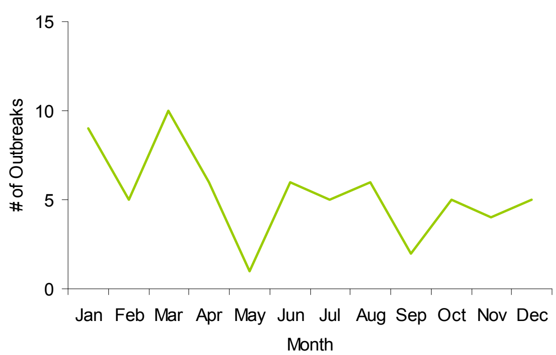
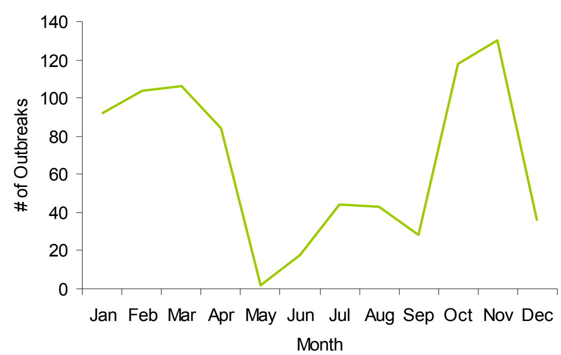


Figure 6. Total Number of Reported Foodborne Disease Outbreak-Related Cases by Month, Florida, 2010



Etiology

Foodborne disease outbreaks caused by bacterial (46.9%) and viral pathogens (39.1%) accounted for most of the total reported foodborne disease outbreaks with a known etiology. Foodborne disease outbreaks caused by bacterial pathogens also accounted for the most reported cases (51.3%). Pathogen type was unknown for 9.4% of the reported foodborne disease outbreaks accounting for 6.8% of the reported outbreak-related cases (Table 2).

Among foodborne disease outbreaks with a suspected and/or confirmed etiology, Norovirus was the most frequently reported etiology for 2010 accounting for 25 (39.1%) outbreaks followed by *Salmonella* and *Vibrio vulnificus*, each accounting for 5 (7.8%) outbreaks. Norovirus also accounted for the highest number of confirmed and probable outbreak-related cases with 325 (40.4%) cases followed by *Bacillus cereus,* which accounted for 158 (15.3%) cases (Table 2).

Table 2. Number and Frequency of Foodborne Outbreaks and Cases by Etiology, Florida, 2010

Pathogen	Outbreaks		Cases	
	Number	Percent	Number	Percent
Unknown				
Total Unknown	6	9.38%	55	6.83%
Bacterial				
B. cereus	9	14.06%	158	19.63%
C. perfringens	3	4.69%	123	15.28%
Campylobacter sp.	1	1.56%	19	2.36%
Salmonella sp.	5	7.81%	76	9.44%
Shigella sp.	1	1.56%	16	1.99%
Staphylococcus sp.	3	4.69%	10	1.24%
V. parahaemolyticus	2	3.13%	4	0.50%
V. vulnificus	5	7.81%	5	0.62%
Total Bacterial	25	38.46%	175	24.14%
Viral				
Norovirus	25	39.06%	325	40.37%
Total Viral	25	39.06%	325	40.37%
Marine Toxin				
Ciguatera	1	1.56%	4	0.50%
Icthyootoxic Poisoning	1	1.56%	2	0.25%
Scombroid	2	3.13%	8	0.99%
Total Marine Toxin	4	6.25%	14	1.74%
Total	**64**		**805**	

Implicated Food Vehicles

Multiple items and multiple ingredients were the most frequently reported general vehicles contributing to foodborne disease outbreaks in Florida for 2010 (Table 3).

Table 3. Foodborne Illness Outbreaks and Cases by General Vehicle, Florida, 2010

General Vehicle	Outbreaks		Cases	
	Number	Percent	Number	Percent
Multiple Items*	23	35.94%	278	34.53%
Fish	6	9.38%	25	3.11%
Multiple Ingredients**	19	29.69%	194	24.10%
Produce-Vegetable	3	4.69%	48	5.96%
Shellfish-Molluscan	6	9.38%	7	0.87%
Poultry	1	1.56%	95	11.80%
Rice	2	3.13%	105	13.04%
Pizza	1	1.56%	7	0.87%
Pork	2	3.13%	5	0.62%
Ice	1	1.56%	41	5.09%
Total	64		805	

*Multiple Items are food vehicles in which several foods are combined during preparation or cooking and the entire food product is suspected or confirmed to be contaminated (e.g., casseroles, soups, sandwiches, salads, etc.).
**Multiple Ingredients are food vehicles in which several foods are individually prepared or cooked and more than one food is suspected or confirmed to be contaminated (e.g., buffet, salad bar, baked chicken and grilled shrimp, etc.).

Contributing Factors

The top contributing factors associated with reported foodborne disease outbreaks in Florida for 2010 are displayed in Table 4. There are three categories of contributing factors (contamination factor, proliferation factor, survival factor). Up to three contributing factors per category can be attributed in an outbreak; as such, the reported numbers may not match the actual number of reported outbreaks and cases.

Table 4. Most Commonly Reported Foodborne Contamination Factors, Florida, 2010

Contamination Factor	Number of Outbreaks	Number of Cases
C1 - Toxic substance part of the tissue	4	14
C6 - Contaminated raw product - food was intended to be consumed after a kill step	3	124
C7 - Contaminated raw product - food was intended to be consumed raw or undercooked / under-processed	8	42
C9 - Cross-contamination of ingredients (cross contamination does not include ill food workers)	6	88
C10 - Bare-handed contact by a food handler/worker/preparer who is suspected to be infectious	12	167
C11 - Glove-hand contact by a food handler/worker/preparer who is suspected to be infectious	5	44
C12 - Other mode of contamination (excluding cross-contamination) by a food worker who is suspected to be infectious	2	6
C13 - Foods contaminated by non-food handler/worker/preparer who is suspected to be infectious	4	46

C14 - Storage in contaminated environment	4	17
C15 - Other source of contamination	5	50
Proliferation Factor	**Number of Outbreaks**	**Number of Cases**
P1 - Food preparation practices that support proliferation of pathogens (during food preparation)	7	68
P2 - No attempt was made to control temperature of implicated food or length of time food was out of temperature	8	109
P3 - Improper adherence of approved plan to use Time as a Public Health Control	2	4
P4 - Improper cold holding due to malfunctioning refrigeration equipment	3	17
P5 - Improper cold holding due to an improper procedure or protocol	7	23
P7 - Improper hot holding due to improper procedure or protocol	9	72
P8 - Improper/slow cooling	5	115
Survival Factor	**Number of Outbreaks**	**Number of Cases**
S1 - Insufficient time and/or temperature control during initial cooking/heat processing	3	79
S2 - Insufficient time and/or temperature during reheating	2	39
S5 - Other process failures that permit pathogen survival	4	57

Regulatory Agency

The Florida Department of Health (DOH) investigates foodborne outbreaks in all public facilities regardless of the regulatory agency responsible for doing routine inspections and issuing permits and citations. Agencies which regulate facilities with foodborne outbreaks are given in Table 5.

Table 5. Foodborne Disease Outbreaks and Cases by Agency with Regulatory Authority, Florida, 2010

Agency	Outbreaks		Cases	
	Number	Percent	Number	Percent
Department of Business and Professional Regulation	41	64.06%	498	61.86%
Department of Health	7	10.94%	210	26.09%
Department of Agriculture and Consumer Services	9	14.06%	46	5.71%
Other	7	10.94%	51	6.34%
Total	64		805	

Outbreak Location

Most reported foodborne disease outbreaks and outbreak-related cases were restaurant-associated (Table 6).

Table 6. Foodborne Illness Outbreaks and Cases by Site, Florida, 2010

Site	Outbreaks		Cases	
	Number	Percent	Number	Percent
Restaurant	37	57.81%	352	43.73%
Home	7	10.94%	52	6.46%
Caterer	5	7.81%	142	17.64%
Grocery	4	6.25%	27	3.35%
Correctional Institution	2	3.13%	122	15.16%
Hospital	1	1.56%	17	2.11%
Other	8	12.50%	93	11.55%
Total	64		805	

References

Scallan E, Griffin PM, Angulo FJ, Tauxe RV, Hoekstra RM, “Foodborne Illness Acquired in the United States - Unspecified Agents,” *Emerg Infect Dis*., 2011 Jan.

Scallan E, Hoekstra RM, Angulo FJ, Tauxe RV, Widdowson M-A, Roy SL, et al., “Foodborne Illness Acquired in the United States - Major Pathogens,” *Emerg Infect Dis*., 2011 Jan.

Section 4

Antimicrobial Resistance Surveillance

Description

Some scientists consider antibiotics to be the single most impressive medical achievement of the 20th Century. However, the continuing emergence and spread of antimicrobial resistance jeopardizes the utility of antibiotics and threatens public health globally. Resistant pathogens are often associated with increased morbidity and mortality, prolonged hospital stays, and increased intensity and duration of treatment.

Currently, the Florida Department of Health (FDOH) conducts surveillance for antibiotic resistance in five microorganisms. Practitioners, hospitals, and laboratories are required to report cases of invasive *Streptococcus pneumoniae* from a normally sterile site, including antibiotic susceptibility testing results; practitioners, hospitals, and laboratories are required to report cases of vancomycin non-susceptible *Staphylococcus aureus*; laboratories participating in electronic laboratory reporting are required to report all *S. aureus* isolates from a normally sterile site with antibiotic susceptibility testing results; isolates of *Neisseria meningitidis* from cases of meningococcal disease are sent to Centers for Disease Control and Prevention (CDC) for additional laboratory testing as part of MeningNet; *Neisseria gonorrheoeae* isolates from the first 25 men with urethral gonorrhea seen each month in one STD clinic in Miami are forwarded to CDC for susceptibility testing as part of the Gonococcal Isolate Surveillance Project (GISP); and all specimens submitted to the FDOH Bureau of Laboratories that test positive for *Mycobacterium tuberculosis* complex are tested for drug susceptibilities. While the requirement for electronic laboratory reporting of *S. aureus* isolates was implemented in 2008, submitting laboratories and the FDOH are working on technical issues regarding the transfer of those data. However, the FDOH has partnered with a large commercial laboratory to receive antibiotic susceptibility data for all the *S. aureus* isolates the laboratory tests that are from Florida residents. The laboratory primarily serves outpatient providers.

Ideally, each patient presenting with an infection suspected to be caused by any of these organisms would be treated based on resistance testing of their own isolate. As this is not always possible, a cumulative antibiogram can provide useful information for the selection of an empiric therapy for a presumptive diagnosis. The selection of an antibiotic for empiric treatment should not be based solely on the cumulative antibiogram. However, the cumulative antibiogram should be considered in conjunction with factors such as the pharmacology of the antibiotic, its toxicity and the patient's hypersensitivity, the potential for interaction of the drug with other drugs the patient may be taking, the effectiveness of the patient's defense mechanisms, and the cost of the drug. Cumulative antibiograms are also useful for tracking the antibiotic resistance patterns of clinically important microorganisms and for detecting trends towards antimicrobial resistance.

Streptococcus pneumoniae

Background

Drug-resistant *S. pneumoniae* (DRSP) invasive disease was added to Florida's list of notifiable diseases in mid-1996. Drug-susceptible *S. pneumonia* (DSSP) invasive disease was added to the list of notifiable diseases mid-1999 to permit the assessment of the proportion of pneumococcal isolates that are drug-resistant, however electronic data capture of resistance testing results was not fully implemented until 2005. When analyzing susceptibility testing results for *S. pneumoniae*, only one antibiotic susceptibility result per case was included, in accordance with Clinical Laboratory Standards Institute (CLSI) guidelines. If there was more than one susceptibility result per case, results were ranked on date of specimen collection (earliest to latest), date of report (latest to earliest), and number of antibiotics tested (most to least) and the top ranking result was selected for inclusion. The decision to include the first result was based on the aim of this report, which is to guide clinicians in the selection of empirical antimicrobial therapy for initial infections.

Not every isolate was tested for resistance to every antibiotic included in this report. When calculating percent susceptibility to an antibiotic, the denominator is the number of cases tested for that particular antibiotic. Susceptibility results are presented for only those antibiotics that are recommended for routine testing and reporting per 2008 CLSI guidelines. CLSI guidelines divide antibiotics into three groups for the purposes of reporting susceptibility testing results. Groups are based on clinical efficacy, prevalence of resistance, minimizing emergence of resistance, cost, FDA clinical indications for usage, and current consensus recommendations for first-choice and alternative drugs. Group A includes antibiotics that CLSI considers appropriate for inclusion in routine, primary testing; Group B includes agents that may warrant primary testing, but which CLSI recommends be reported only selectively; Group C includes agents considered alternative or supplemental antimicrobial agents. Please note that cumulative susceptibility results for antimicrobials in Group B and C may underestimate the actual susceptibility rates in the community if only those isolates resistant to Group A antimicrobials are tested against Group B or C agents.

Data Trends

There were a total of 694 DSSP cases and 816 DRSP cases in 2010. Of the 694 DSSP cases, 11 did not have antibiotic susceptibility data because the patient died and further testing was not done.

The aggregate percent susceptibility for Group A agents were all around 60% (see Table 1). Aggregate percent susceptibility among Group B agents were more variable, ranging from greater than 97% susceptibility to the fluoroquinolones (levofloxacin, moxifloxacin, and ofloxacin) and greater than 99% susceptibility to vancomycin to only 73% susceptibility to tetracycline and 78% susceptibility to clindamycin. Aggregate percent susceptibility for Group C agents were 85% or higher.

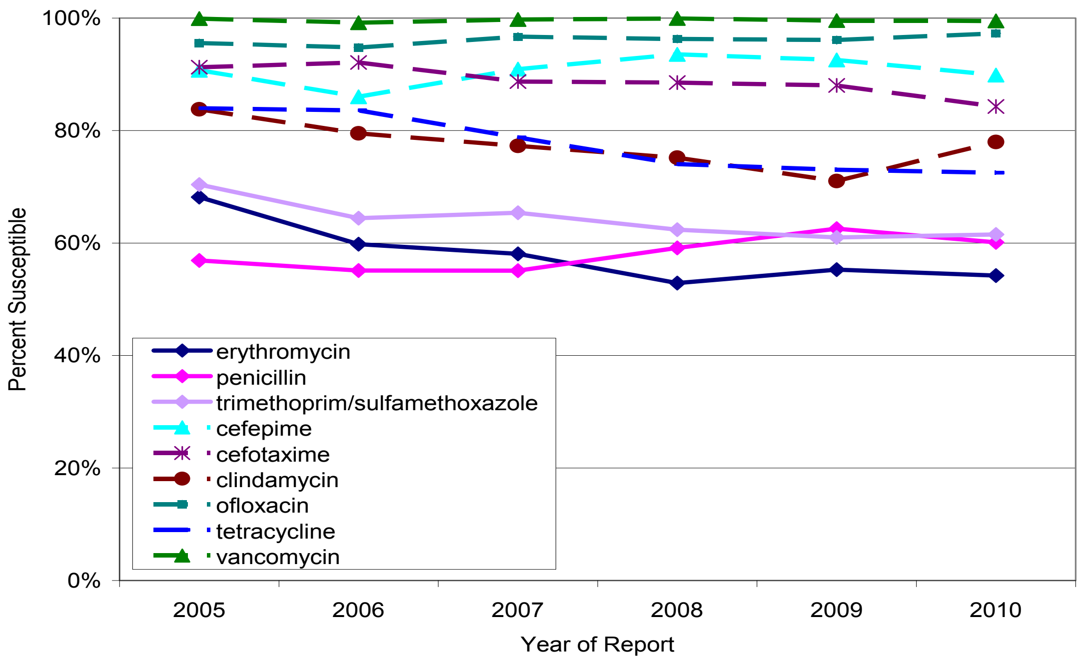
Table 1. *Streptococcus pneumoniae*, Invasive Disease, Antibiotic Resistance, Florida 2010

CLSI Group*	Antibiotic Name	Number of Isolates Tested	Susceptible	Intermediate	Resistant
Group A - primary test & report	Erythromycin	1160	54.2%	1.1%	44.7%
	Penicillin	1377	60.1%	19.2%	20.6%
	Trimethoprim/sulfamethoxazole	1014	61.5%	8.5%	30.0%
Group B - primary test; report selectively	Cefepime	158	89.9%	10.1%	0.0%
	Cefotaxime	783	84.3%	9.7%	6.0%
	Clindamycin	481	78.0%	1.9%	20.2%
	Levofloxacin	283	99.6%	0.4%	0.0%
	Moxifloxacin	85	100.0%	0.0%	0.0%
	Ofloxacin	223	97.3%	0.9%	1.8%
	Meropenem	99	76.8%	6.1%	17.2%
	Tetracycline	796	72.5%	0.6%	26.9%
	Vancomycin	1370	99.5%	0.2%	0.3%
Group C - supplemental; report selectively	Amoxicillin/clavulanic acid	66	90.9%	3.0%	6.1%
	Amoxicillin	67	85.1%	6.0%	9.0%
	Chloramphenicol	393	98.2%	0.0%	1.8%
	Imipenem	66	84.8%	9.1%	6.1%
	Linezolid	88	98.9%	0.0%	1.1%
	Rifampin	85	100.0%	0.0%	0.0%

* CLSI guidelines split antibiotics into three groups for the purposes of reporting susceptibility testing results. Groups are based on clinical efficacy, prevalence of resistance, minimizing emergence of resistance, cost, FDA clinical indications for usage, and current consensus recommendations for first-choice and alternative drugs. Group A includes antibiotics that CLSI considers appropriate for inclusion in routine, primary testing; Group B includes agents that may warrant primary testing, but which CLSI recommends be reported only selectively; Group C includes agents considered alternative or supplemental antimicrobial agents. Please note that cumulative susceptibility results for antimicrobials in Group B and C may underestimate the actual susceptibility rates in the community if only those isolates resistant to Group A antimicrobials are tested against Group B or C agents.

S. pneumoniae susceptibility to most Group A and Group B antibiotics stayed relatively stable from 2005 to 2010 (see Figure 2). Antibiotics with slight increases in susceptibility include penicillin and ofloxacin. Antibiotics with slight decreases in susceptibility include erythromycin, trimethoprim/sulfamethoxazole, cefotaxime, clindamycin, and tetracycline.

Figure 1. *Streptococcus pneumoniae*, Invasive Disease, Aggregate Percent Susceptible to Select CLSI Group A** and Group B** Antibiotics, Florida, 2005-2010



* In 2010, the FDOH increased the number of antimicrobials for which it was able to collect susceptibility testing results. Prior to 2010, aggregated susceptibility results are not available for these antimicrobials (levofloxacin, moxifloxacin, and meropenem) and they are not included on this graph.
** CLSI Group A antimicrobial agents are depicted on this graph with solid lines while Group B agents are depicted with dashed lines

In general, the lowest cumulative susceptibility was seen among young children (see Table 2). For example, only 33% of cases in young children (aged 1-4 years) tested for resistance to erythromycin were susceptible, versus 42% of cases in youth (aged 15-24 years) and over 50% in all other age groups. Only 39% of cases in young children were susceptible to penicillin, versus 47% or higher in all other age groups. And likewise, only 34% of cases in young children were susceptible to trimethoprim/sulfamethoxozole versus 53% or higher in other age groups.

Table 2. *Streptococcus pneumoniae*, Invasive Disease, Cumulative Percent Susceptibility to Select Antibiotics by Age Group, Florida 2010

		Group A - primary test & report			Group B - primary test; report selectively								
Age Group	Number of Isolates Tested‡	Erythromycin	Penicillin	Trimethoprim/ sulfamethoxazole	Cefepime	Cefotaxime	Clindamycin	Levofloxacin	Moxifloxacin	Ofloxacin	Meropenem	Tetracycline	Vancomycin
<1 (infant)	50	50%	48%	56%	*	93%*	88%*	100%*	*	100%*	*	70%	100%
1-4 (young child)	156	33%	39%	34%	93%*	67%	55%	100%*	*	100%*	*	50%	99%
5-14 (child)	44	53%	47%	53%	*	74%*	77%*	100%*	*	*	*	45%*	97%
15-24 (youth)	36	42%*	53%	54%*	*	75%*	100%*	*	*	100%*	*	67%*	100%
25-64 (adult)	710	60%	64%	63%	90%	85%	80%	99%	100%	97%	73%	77%	100%
65+ (senior)	514	55%	64%	69%	89%	89%	81%	100%	100%	97%	86%	75%	100%

* Marked observations are those in which too few cases (<30) were tested to produce reliable estimates of susceptibility. Results of age group/drug combinations where there were fewer than 10 cases tested were suppressed.

Resistance patterns were also summarized by Regional Domestic Security Task Force Region. The South West Region tended to have the lowest cumulative susceptibility for the majority of the antimicrobials, while the Northern regions (Northeast, North Central, Northwest) tended to have the highest cumulative susceptibility (See Table 3).

Table 3. *Streptococcus pneumoniae*, Invasive Disease, Cumulative Percent Susceptibility to Select Antibiotics by Regional Domestic Security Task Force Region, Florida 2010

		Group A - primary test & report			Group B - primary test; report selectively								
Region	Number of Isolates Tested‡	Erythromycin	Penicillin	Trimethoprim/ sulfamethoxazole	Cefepime	Cefotaxime	Clindamycin	Levofloxacin	Moxifloxacin	Ofloxacin	Meropenem	Tetracycline	Vancomycin
East Central	304	48%	58%	68%	100%*	86%	84%	100%	100%*	99%	80%*	70%	99%
North Central	35	70%*	76%*	65%*	*	81%*	95%*	*	*	*	*	91%*	100%
Northeast	158	62%	59%	66%	88%	87%	88%	100%*	*	*	84%*	83%	100%
Northwest	113	68%	65%	65%	91%	86%	83%	100%*	100%*	100%*	77%*	83%	97%
Southeast	457	55%	64%	55%	100%*	83%	73%	99%	100%*	96%*	*	72%	99%
Southwest	183	42%	53%	54%	*	85%	78%*	100%*	100%*	98%	69%*	60%	100%
West Central	260	54%	58%	61%	81%*	81%	72%	100%	100%*	89%*	74%*	67%	100%

* Marked observations are those in which too few cases (<30) were tested to produce reliable estimates of susceptibility. Results of age group/drug combinations where there were fewer than 10 cases tested were suppressed.

Staphylococcus aureus

Background

While the requirement for all laboratories participating in electronic laboratory reporting to submit *S. aureus* isolates with susceptibility testing results was implemented in 2008, submitting laboratories and the FDOH are still working to get participating facility data streams implemented and validated. However, in 2005, the FDOH began receiving antibiotic susceptibility data for all *S. aureus* isolates tested by a large commercial laboratory that primarily serves outpatient providers operating throughout Florida. Data from 2003 and 2004 were retrospectively collected and, as of 2010, eight years of data are available. That data is presented here. For the purposes of this analysis, and in accordance with Clinical Laboratory Standards 2008 (CLSI) guidelines, only the first isolate per person per 365 days was included; duplicate isolates were excluded from the analysis.

S. aureus bacteria are commonly found on the skin of healthy individuals, but have the potential to cause serious disease. About 20% of healthy individuals are persistent carriers of *S. aureus*, usually in the nose and on the skin, over 60% of the population may be intermittent carriers, and a small portion of people rarely carry S. aureus. Methicillin-resistant *S. aureus* (MRSA) is a strain of *S. aureus* that is considered to be resistant to all β-lactam antibiotics (including penicillins, cephalosporins, cephamicins, and monobactams). It may also be resistant to other antibiotics. Resistance testing for oxacillin is used to detect methicillin resistance.

Healthcare-acquired (HA) infections due to MRSA have been identified for over four decades. In recent years, however, infections due to MRSA have also been increasing in the community in individuals without healthcare-associated risk factors. Skin and soft tissue infections are the most common type of infection resulting from community-associated (CA) *S. aureus*. While the line between healthcare-associated and community-associated *S. aureus* has increasingly blurred, they are generally distinct strains of the bacteria with different antibiotic resistance patterns. While HA-MRSA is typically not more virulent or pathogenic than methicillin-susceptible *S. aureus* (MSSA), only more difficult to treat, CA-MRSA does have enhanced virulence. It can elicit tissue necrosis, grow faster, and compete more effectively than other strains of *S. aureus*. It is common for HA-MRSA to have resistance to multiple classes of antimicrobial agents; such wide resistance patterns are uncommon in CA-MRSA.

Data Trends

After the removal of duplicate isolates for individuals with more than one isolate in a 365 day period, there were 50,996 *S. aureus* isolates included in the analysis in 2006, 53,131 in 2007, 61,083 in 2008, 63,427 in 2009, and 60,947 in 2010. Resistance to penicillin was above 90% and rose throughout the period. The percentage of all isolates that were methicillin-resistant (as determined by oxacillin resistance) was 50-52% for the entire period. Resistance to other β-lactam drugs mirrored oxacillin resistance, remaining stable above 50% for the entire period. Resistance remained low for gentamycin, trimethoprim-sulfamethoxazole, linezolid, vancomycin and tetracycline. While in vitro resistance to clindamycin was only 15-21%, resistance to erythromycin was substantially higher (65%-68%), indicating the potential for inducible clindamycin resistance and subsequent treatment failure.

Table 4. Number Tested and Percent of *Staphylococcus aureus* Isolates from a Commercial Laboratory Susceptible to Select Antibiotics, Florida, 2006-2010

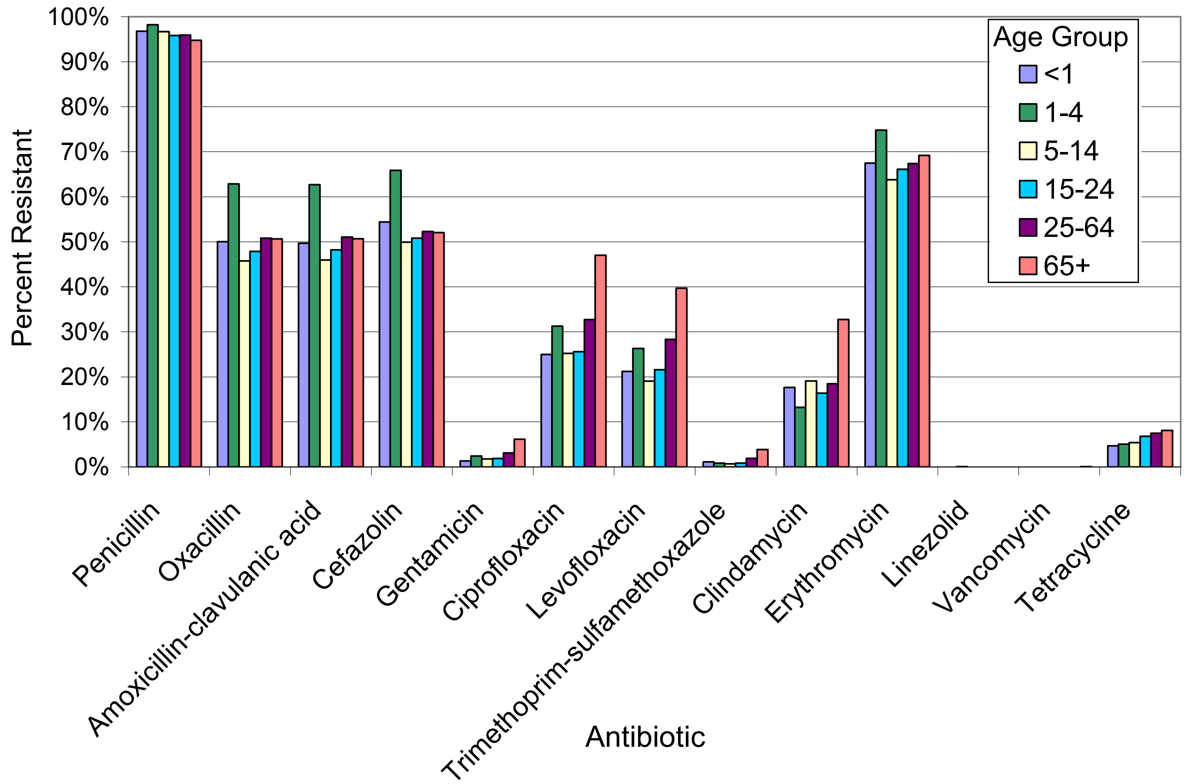
	Antibiotic Class	Antibiotic Name	2006		2007		2008		2009		2010	
			N*	%**	N*	%**	N*	%**	N*	%**	N*	%**
β-lactams	Penicillins	Penicillin	50763	8.7%	52066	8.3%	56334	7.1%	57188	5.0%	52067	4.0%
	Penicillinase-stable penicillins	Oxacillin (MRSA)	50840	49.9%	52462	48.0%	58255	48.1%	60416	49.9%	58005	49.2%
	β-lactam/β-lactamase inhibitor combinations	Amoxicillin-clavulanic acid	50808	49.7%	52450	47.7%	58404	48.1%	60481	49.8%	57797	49.0%
non-β-lactams	Cephalosporin I	Cefazolin	44968	43.9%	52175	47.8%	58352	48.1%	60401	49.7%	41861	47.0%
	Aminoglycosides	Gentamicin	50835	98.3%	52875	98.2%	60427	98.3%	62741	97.3%	60314	96.7%
	Fluoroquinolones	Ciprofloxacin	50803	74.5%	52754	72.5%	56530	71.9%	23167	71.9%	32437	66.1%
		Levofloxacin	24658	76.1%	1153	74.7%	6329	76.0%	42201	73.0%	57350	71.7%
	Folate Pathway Inhibitors	Trimethoprim-sulfamethoxazole	50824	98.8%	52585	98.7%	58542	98.3%	61290	98.1%	59031	98.1%
	Lincosamides	Clindamycin	34599	84.3%	31194	81.2%	54959	82.4%	56697	81.9%	54636	79.4%
	Macrolides	Erythromycin	38977	33.6%	14423	34.2%	15947	33.4%	17108	35.6%	36170	32.2%
	Oxazolidinones	Linezolid	406	99.8%	8535	99.9%	16136	100%	39544	100%	53650	100%
	Glycopeptides	Vancomycin	50814	100%	52536	100%	58258	100%	60786	99.9%	58426	100%
	Tetracyclines	Tetracycline	49409	93.8%	50731	94.4%	57613	94.5%	60227	94.0%	57994	93.0%

* N is the total number of isolates tested for susceptibility to the selected antibiotic
** % is the percent of isolates susceptible to the selected antibiotic
‡*Vancomycin non-susceptible isolates are likely false-positives. There were only 2 laboratory confirmed vancomycin-intermediate S. aureus cases (VISA) reported to the FDOH in 2010. The commercial laboratory that supplied the data for this analysis used the VITEK system to determine resistance patterns, a test method which has been noted for the occurrence of false-positive test results for vancomycin resistance. It is protocol that isolates that are initially non-susceptible to vancomycin should be retested using manual methods, but unfortunately, final results of that testing are not always included in the data. While there are several vancomycin non-susceptible isolates included in this data, to date, there have been no vancomycin-resistant S. aureus (VRSA) infections reported to the FDOH and only 12 laboratory confirmed VISA infections reported since 2007. There was one VISA case reported in 2007, 3 in 2008, 6 in 2009, and 2 in 2010. The case definition for VISA was changed during that period, lowering the Minimum Inhibitory Concentration (MIC). The increase in reported VISA from 2007 to 2010 is thus partly attributable to a reporting artifact and not reflective of the true magnitude of any increase in VISA that may have occurred.*

Of the nearly 61,000 isolates tested in 2010, 95.1% (n=58,005) were tested for susceptibility to oxacillin. Of those, just over half (50.8%) had intermediate or full resistance to oxacillin, indicating that they are MRSA and therefore resistant to all β-lactam antibiotics. Additionally, as in previous years, resistance was elevated to antibiotics belonging to the fluoroquinolone (ciprofloxacin and levofloxacin), lincosamide (clindamycin), and macrolide (erythromycin) classes. Tested organisms remained highly susceptible to drugs from the aminoglycoside (gentamicin), folate pathway inhibitor (trimethoprim-sulfamethoxazole), oxazolidinone (linezolid), glycopeptides (vancomycin), and tetracycline (tetracycline) classes.

The proportion of *S. aureus* isolates resistant to various antibiotics did not differ substantially by age group, with a few exceptions. Isolates taken from individuals aged 1 to 4 years had the highest level of resistance to oxacillin, causing them to be classified as MRSA and indicating resistance to all β-lactam antibiotics. Additionally, isolates taken from older individuals had greater resistance to gentamicin (6.1% versus 2.6% in those <65 years), ciprofloxacin (47.0% versus 30.1%), levofloxacin (39.7% versus 25.4%), trimethoprim-sulfamethoxazole (3.8% versus 1.4%), and clindamycin (32.7% versus 17.6%). Resistance was also higher in isolates taken from older patients for tetracycline and erythromycin (with the exception of high levels of resistance seen in those aged 1 to 4 years), although the difference was not as substantial (Figure 2).

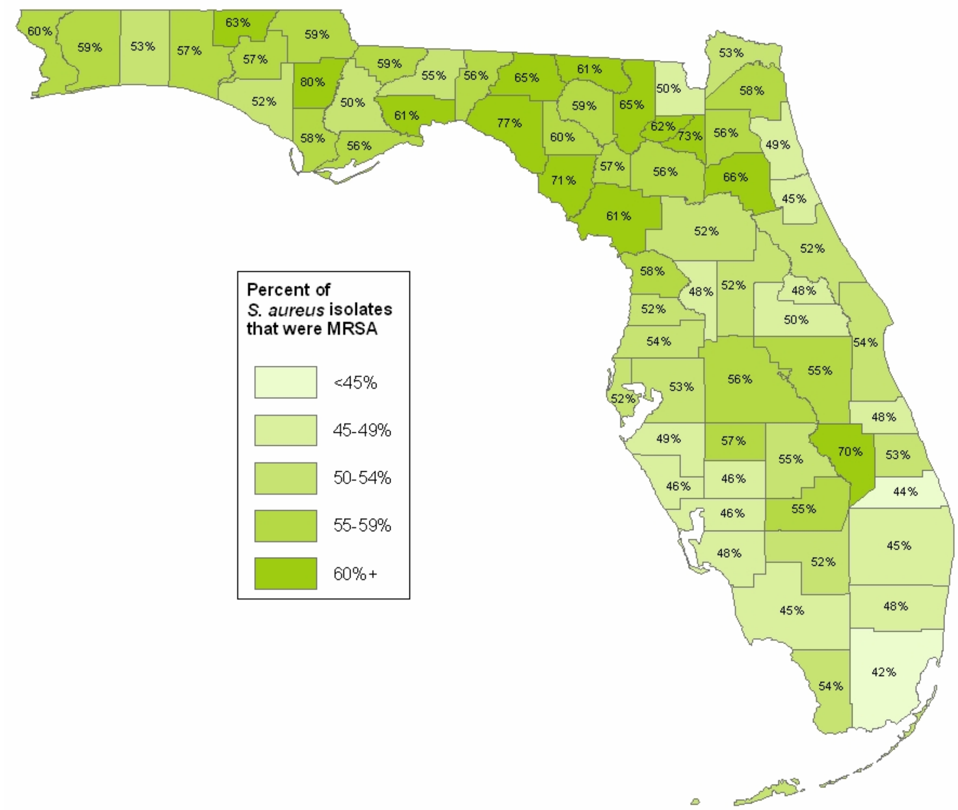
Figure 2. Resistance Patterns of *Staphylococcus aureus* Isolates Tested by a Commercial Laboratory by Age Group, Florida, 2010



Of the 54,192 isolates in 2010 where the patient's address could be assigned to a Florida county, the majority were from individuals who lived in the Southeast Region of the state (n=16,077, 29.7%). Nearly all of the isolates that could be mapped were tested for susceptibility to oxacillin (n=51,597, 95.2%). The Northern part of the state had the highest proportion of *S. aureus* isolates that were MRSA (61.1% in the North Central Region, followed by 56.8% in the Northwest Region and 56.0% in the Northeast Region), while the lowest proportion of isolates that were MRSA was seen in the Southeast Region (44.9%) (Figure 3).

The South East Region is comprised of Palm Beach, Broward, Miami-Dade, and Monroe Counties. The North Central Region is comprised of Gadsden, Liberty, Franklin, Leon, Wakulla, Jefferson, Madison, Taylor, Hamilton, Suwannee, Lafayette, Dixie, and Columbia Counties. The Northwest Region is comprised of Escambia, Santa Rosa, Okaloosa, Walton, Holmes, Washington, Bay, Jackson, Calhoun, and Gulf Counties. The Northeast Region is comprised of Baker, Union, Gilchrist, Levy, Marion, Alachua, Bradford, Putnam, Flagler, Clay, St. Johns, Duval, and Nassau Counties.

Figure 3. Proportion of *Staphylococcus auraus* Isolates Tested by a Commercial Laboratory that were Oxacillin-Resistant (MRSA), by Patient's County of Residence, Florida, 2010



Conclusions

Community-associated MRSA is a significant source of skin and soft tissue infections in Florida. Knowledge of the community antibiogram can be clinically useful when considering options for empirical treatment of skin infections. The proportion of *S. aureus* infections diagnosed in an outpatient setting that are MRSA is around 50%. Based on this high prevalence of MRSA, empiric treatment of skin and soft tissue infections with β-lactam antibiotics is not recommended.

A more detailed surveillance report on community-associated *S. aureus* is available on the FDOH website at: http://www.doh.state.fl.us/Disease_ctrl/epi/htopics/anti_res/MRSA_StatewideSummary_CHDs.pdf.

Neisseria meningitidis

The emergence of quinolone-resistant *Neisseria meningitidis* in the U.S. has raised important questions regarding current chemoprophylaxis guidelines and highlights the expanding threat of antimicrobial resistance in bacterial pathogens. The Centers for Disease Control and Prevention (CDC) responded to this threat by forming MeningNet, an enhanced meningococcal surveillance system that will be used to monitor antimicrobial susceptibility. As part of MeningNet, Florida Bureau of Laboratories (BOL) began forwarding all *N. meningitidis* isolates to the CDC for antibiotic susceptibility testing in late 2008.

Of the 60 cases of meningococcal disease in Florida in 2010, 55 cases had an isolate that was submitted to CDC for testing as part of MeningNet. Of those 55 isolates that were sent, four were non-viable upon arrival at CDC. All 51 remaining isolates from Florida were tested for susceptibility to penicillin, ceftriaxone, ciprofloxacin, rifampin, and azithromycin with the use of the Etest. Isolates that screened positive for decreased susceptibility were confirmed with the use of broth microdilution. All other isolates were fully (100%) susceptible to ceftriaxone, ciprofloxacin, and rifampin and fully susceptible or intermediate-susceptible to penicillin. Only one isolate tested non-susceptible to azithromycin, all other isolates were susceptible. This case was in an infant from Northwest Florida with serogroup B infection. No travel history or epidemiologicaly linked cases were noted.

Neisseria gonorrhoeae

Background

The treatment and control of gonorrhea has been challenged due to the development of resistance to several antimicrobial agents over time. In the 1970's the standard treatments of penicillin and tetracycline were abandoned due to increased resistance. As late as 2007, an increase in fluoroquinolone resistant isolates prompted recommendations for new treatment guidelines supporting the use of cephalosporins for gonococcal infections. In some parts of the world, the bacterium is now showing potential resistance to cephalosporins, the only recommended class of antibiotics left.

The Gonococcal Isolate Surveillance Project (GISP) was established in 1986 to continuously monitor trends in antimicrobial susceptibilities of strains of *N. gonorrhoeae* across 30 cities in the United States. In Florida, the Miami-Dade Sexually Transmitted Disease (STD) clinic has served as one of 29 GISP sites since 1998. The Miami-Dade STD clinic collects specimens each month for culture from symptomatic males. If the Gram stain is positive for the presence of diplococci, the specimen is forwarded to the Bureau of Laboratories-Miami for growth detection and identification, and then shipped to the CDC until 25 viable *N. gonorrhoeae* isolates are reached for the month. The CDC monitors susceptibility of isolates to cefixime, cefpodoxime, ceftriaxone, tetracycline, spectinomycin, ciprofloxacin, penicillin, and azithromycin.

Data Trends

In the past five years, 1,165 viable specimens were collected from the Miami-Dade GISP site. In 2010, 209 isolates were submitted in which resistance to penicillin and tetracycline remained high and resistance to the fluoroquinolone, ciprofloxacin, remained stable. Minimal increases in azithromycin were noted in 2010 compared to previous years. Recommendations to only use cephalosporins in 2007 have been credited with the steady decline of gonorrhea in Florida. Currently, the cephalosporin antibiotics, ceftriaxone and cefixime, have not shown any signs of resistance in Florida-submitted isolates.

Table 5. Percent of *Neisseria gonorrhoeae* Isolates Susceptible to Select Antibiotics, Miami-Dade GISP Site, 2006-2010

Antibiotic	2006 (N=212)*	2007 (N=266)*	2008 (N=259)*	2009 (N=219)*	2010 (N=209)*
Penicillin (MIC‡ > 2.0 ug/ml)	94.4%	79.4%	86.5%	87.7%	78.9%
Tetracycline (MIC‡ > 2.0 ug/ml)	70.3%	60.0%	61.4%	64.8%	67.0%
Spectinomycin (MIC‡ > 128.0 ug/ml)	100.0%	100.0%	100.0%	100.0%	100.0%
Ciprofloxacin (MIC ‡> 1.0 ug/ml)	80.2%	80.5%	85.7%	88.6%	86.1%
Ceftriaxone (MIC‡ > 0.5 ug/ml)	100.0%	100.0%	100.0%	100.0%	100.0%
Cefixime (MIC‡ > 0.5 ug/ml)	100.0%	100.0%	100.0%	100.0%	100.0%
Azithromycin (MIC‡ > 2.0 ug/ml)	100.0%	100.0%	100.0%	100.0%	98.6%

* N is the total number of isolates found to be resistant to the selected antibiotic
‡MIC=Minimum Inhibitory Concentration: the lowest concentration of antibiotic needed to inhibit visible growth of a microorganism in laboratory.

CDC recommends the regimen of 250 mg IM in a single dose of ceftriaxone, 400 mg orally in a single dose of cefixime, or a single dose injectible cephalosporin regimen plus azithromycin (1g orally in a single dose) or doxycycline (100mg orally twice a day for 7 days) for uncomplicated gonococcal infections of the cervix, urethra, and rectum.

References

Centers for Disease Control and Prevention, Gonorrhea-CDC Fact Sheet, available at: http://www.cdc.gov/std/Gonorrhea/STDFact-gonorrhea.htm.

Centers for Disease Control and Prevention, “Sexually Transmitted Diseases: Treatment Guidelines, 2010,” *MMWR* 2010, 59 (no. RR-12).

Mycobacterium tuberculosis

Background

Tuberculosis (TB) is an infectious respiratory disease caused by the *Mycobacterium tuberculosis* bacilli. This disease is spread by aerosolized droplets from individuals with active TB when they cough, sing, speak, or laugh. Each year there are over nine million infections and 1.7 million deaths caused by the disease worldwide. The development of drug resistance is a serious development for patient care and public health. Multidrug-resistant TB (MDR TB) is TB that is resistant to at least two of the most important anti-TB drugs, isoniazid and rifampin. These drugs are considered first-line drugs and are used to treat all persons with TB disease. The Florida Department of Health (FDOH) BOL conducts susceptibility testing on all initial specimens positive for *Mycobacterium tuberculosis* complex submitted from Florida healthcare entities, as well as county health department clinics.

Current Data

In 2010, the susceptibility results to the first-line TB drugs for specimens submitted to the BOL for analysis are listed in Table 6. There were 4 patients diagnosed with MDR TB in Florida.

Table 6. *Mycobacterium tuberculosis* Complex Susceptibility Results to First-Line TB Drugs, Tested by the FDOH Bureau of Laboratories, 2010*

Antibiotic/Concentration	# Susceptible	% Susceptible	# Resistant	% Resistant
Rifampin 2.0 µg/ml	529	98.5%	8	1.5%
Isoniazid 0.1 µg/ml	499	92.9%	38	7.1%
Pyrazinamide 100 µg/ml	533	99.3%	4	0.7%
Ethambutol 2.5 µg/ml	532	99.1%	5	0.9%
Streptomycin 2.0 µg/ml	503	93.7%	34	6.3%

*Only one isolate per Florida TB patient included; N=537 total tested using BACTEC 460TB

References

Centers for Disease Control and Prevention, Drug-resistant TB, available at: http://www.cdc.gov/tb/topic/drtb/default.htm.

Centers for Disease Control and Prevention, Tuberculosis Data and Statistics, available at: http://www.cdc.gov/tb/statistics/default.htm.

Section 5

Notable Outbreaks & Case Investigations 2010

Listed alphabetically by disease or surveillance system

In Florida, any disease outbreak in a community, hospital, or institution, as well as any grouping or clustering of patients having similar disease, symptoms, syndromes, or etiological agents that may indicate the presence of an outbreak is reportable, as per Florida Administrative Code, Chapter 64D-3. Selected outbreaks or case investigations of public health interest that occurred in 2010 are briefly summarized below. Following many investigation summaries are citations or links where additional information can be found about the event. Investigation summaries are organized by disease name. Within each disease category investigations are listed chronologically (January through December, 2010).

Additional disease summaries and information describing epidemiologic events in Florida can be found in issues of *Epi Update*. *Epi Update*, a publication of the Bureau of Epidemiology, Florida Department of Health, can be accessed through the following site: http://www.doh.state.fl.us/disease_ctrl/epi/Epi_Updates/index.html.

Food and waterborne disease outbreaks in Florida are summarized in annual reports produced by the Bureau of Environmental Public Health Medicine accessible via the following site: http://www.doh.state.fl.us/environment/community/foodsurveillance/annualreports.htm. Annual food and waterborne reports include overall statewide data, as well as summaries of selected outbreaks. In addition, a bibliography of journal and *Epi Update* articles on food and waterborne disease can be found at the following site: http://www.doh.state.fl.us/environment/medicine/foodsurveillance/annualreports.htm.

Bacillus cereus

***Bacillus cereus* Outbreak Involving Supermarket Catered Meats, Orange County, January 2010**
On January 11, 2010 the Orange County Health Department (OCHD) was notified through the Florida Poison Information Center Network of a suspect foodborne illness outbreak. At least 14 people experienced diarrhea, abdominal pain, and fatigue, starting 6-8 hours after a birthday party on January 9, 2010. Meats, desserts, and snacks at the party were purchased at a local grocery store, while the remaining items were provided by friends and family members. An outbreak investigation was initiated involving the OCHD Epidemiology and Environmental Health Programs, the regulatory agency for grocery stores, and the Department of Agriculture and Consumer Services (DACS). A list of guests and a menu of the catered and homemade foods were provided by the person filing the complaint. A questionnaire was developed and phone interviews of party guests were conducted by OCHD Epidemiology Program staff. In addition, samples of the leftover pork and baked chicken, along with stool samples from two ill guests, were shipped to the Florida Bureau of Laboratories (BOL) for testing.

Seventeen out of twenty-six guests interviewed reported becoming ill. Statistical analysis demonstrated a significant association between illness and consumption of the baked chicken and pork from the supermarket. The food samples tested at the BOL were positive for the presence of *Bacillus cereus*. The submitted stool samples tested negative for norovirus, *Salmonella, Shigella, E.coli O157:H7*, and *Campylobacter*. There is no testing available through BOL for *Bacillus cereus* in stool samples, but the clinical syndrome is consistent with infection by this agent. A joint inspection of the supermarket was conducted by OCHD and DACS on January 12, 2010; during this time 23 violations were identified. The violations included employees improperly washing hands before and after changing gloves, paper towels not available at all hand wash sinks, no date mark on multiple ready-to-eat foods, and pork and chicken products held at temperatures below appropriate temperatures (135 degrees Fahrenheit). The epidemiological investigation, laboratory findings, and data analysis indicated an association between this outbreak of *Bacillus cereus* in party attendees and catered meats purchased and consumed from the supermarket on January 9, 2010.

Bacillus cereus is a Gram-positive bacteria that is associated with temperature abuse of food items like meats, milk, vegetables, fish, rice, pasta, potatoes, and cheese products.

Brucellosis

Confirmed Brucellosis with Hospital and Laboratory Exposures, Escambia County, October 2010
The Escambia County Health Department (ECHD) Epidemiology Program received a call on October 27, 2010 from a local hospital concerning a possible positive *Brucella* culture from an Alabama resident. The investigation was initiated immediately with the cooperation of the Alabama Department of Public Health (ADPH), the local hospital infection control practitioners (ICPs), and laboratory personnel. The ADPH stated that this person reported flu-like symptoms beginning in February 2010, and has had chronic back pain since that time.

It was reported by the hospital ICPs that on October 6, the person presented to the Escambia County hospital for a needle biopsy of a vertebral abscess. Fluid from the abscess was extracted and introduced onto culture media in the operating room. The culture results were inconclusive. On October 22, the person returned to the hospital for a core biopsy using a surgical drill. A sample of cerebrospinal fluid (CSF) and a bone specimen were collected. The microbiology laboratory reported heavy bacterial growth in the culture media. This specimen was forwarded to the Bureau of Laboratories in Pensacola and was positive via polymerase chain reaction (PCR) for *Brucella* on October 27. Subsequently, the specimen was typed as *Brucella suis* Biovar 1, which was later confirmed by the Centers for Disease Control and Prevention (CDC).

There were several factors considered in the identification of all potentially exposed hospital staff. The unusually heavy bacterial growth from the CSF culture indicated there was a high risk of the bacteria artificially aerosolizing during both of the previous medical procedures creating possible exposures among health care staff. There were also possible exposures in those who were in contact with the biopsy specimens and/or the pure bacterial culture. The ICPs identified all hospital staff recorded as being present during the October 6 and October 22 procedures, as well as all microbiology and pathology laboratory workers who were exposed to the biopsy specimens and/or pure bacterial culture. Those identified were assessed for their need to begin CDC recommended prophylaxis, fever watch, and serological follow-up.

A total of 28 individuals were identified as being possibly exposed. This included 25 medical personnel classified as having had a high risk exposure and three with low risk exposures. Twenty-three individuals accepted prophylaxis, including one pregnant laboratory worker and one laboratory student who was breastfeeding. There were three individuals with high risk exposures who refused prophylaxis.

The ill person had a previous history of hunting and butchering pigs, foreign missionary travel, and consuming ice cream made from un-pasteurized milk. Due to the multiple risk factors associated with this case, a bioterrorism threat was not suspected. As a precaution, and since *Brucella* is a Category B bioterrorism agent, the Public Health Preparedness Division and the Regional Emergency Response Advisor (RERA) were notified of this case.

Brucellosis Case with Lab Exposures, Highlands County, July 2010
On Tuesday, July 6, the Highlands County Health Department (HCHD) was notified by a local hospital infection control practitioner (ICP) of a suspect brucellosis case in a man aged 50 years. An investigation in conjunction with the ICP, the hospital laboratory, the Orange County Health Department and the Bureau of Laboratories - Jacksonville (BOL) was initiated. On July 15, 2010 speciation testing at BOL confirmed that the organism was *Brucella suis*.

The man presented to the emergency department on June 26 with a six-month history of intermittent high fever and a dry cough. Other symptoms included sweating, malaise, headache, and loss of appetite. Blood samples for culture were obtained at the local hospital A, located in Highlands County, with initial Gram staining conducted on July 2. The sample was forwarded to another hospital laboratory B, located in Orange County, for further testing. The man was treated with Doxycycline and Rifampin and was released from the hospital with a 34-day regimen of antibiotics. He is a regular hunter with exposures to secretions of wild pigs and went hunting almost weekly during the winter months. He did not report any recent travel or consumption of un-pasteurized foods. He has no occupational risk, and no known contacts with similar symptoms.

Neither of the hospital laboratories used the appropriate precautions when handling the specimen and performing the blood culture, as the treating physician did not notify the laboratory that brucellosis was part of the differential diagnoses for this case. Risk assessment and post exposure prophylaxis considerations were evaluated for those exposed to the culture at both hospital A and hospital B. There were two laboratory workers identified at hospital A who met the definition of high risk, and five high-risk exposures were identified at hospital B. There were no low risk exposures identified. Both hospitals were provided guidance on the prophylaxis and testing of exposed staff. No evidence of brucellosis transmission was reported and all exposed laboratory workers had negative serologic test results at week 24.

Laboratory exposures to the sample could have been eliminated or reduced if suspicion of brucellosis had been communicated to the testing laboratory so that appropriate precautions could be taken when handing the culture. Education on the risk of exposures to laboratory workers was provided to the hospital and to the treating physician. This investigation underscores the need for effective communication methods and good laboratory training as *Brucella suis* is endemic in Florida's wild pig population.

Campylobacteriosis

Campylobacter jejuni at a Correctional Facility, Sumter County, August 2010

The Sumter County Health Department (SCHD) Epidemiology Program was contacted by a nursing supervisor at a Sumter County Correctional Institution (CI) on August 19, 2010. The nursing supervisor reported an increase in gastrointestinal illnesses (GI) at the CI. During the initial telephone call, seven illnesses were reported. The total CI population was 1,694 inmates with 432 staff members. The CI conducted enhanced surveillance by surveying inmates in their dormitories, identifying all who experienced either vomiting or diarrhea during the week of August 16 - 20. Following the survey, the number of GI illnesses reported at the CI increased to 75 inmates.

A team of SCHD Epidemiology and Environmental Health staff and the Regional Environmental Epidemiologist (REE) completed an environmental assessment of the CI kitchen on August 24. The team also conducted in-person interviews with a random selection of inmates who met the definition for the outbreak, which was defined as inmates who experienced either diarrhea or vomiting from August 17-20. On August 25, an additional 22 interviews with non-ill inmates (controls) were completed by the Department of Corrections (DOC) staff.

The SCHD picked up six stool specimens from the CI Medical Unit on August 20. One additional specimen was forwarded from the CI's hospital laboratory to a private laboratary for a total of seven specimens. Specimens were shipped to the Florida Department of Health Bureau of Laboratories - Jacksonville and analyzed for *Salmonella, Shigella, Campylobacter, E.coli* O157:H7*, Shigella*, and norovirus organisms. Five of the six stool samples tested positive for *Campylobacter jejuni* on August 26. One additional specimen tested at a local hospital laboratory was also positive, resulting in six confirmed cases.

Forty-four interviews with 22 ill people and 22 controls were completed. Two of the inmates interviewed were categorized as secondary cases and one case was excluded due to missing information, for a total of 19 cases for analysis. Nineteen interviews were selected from the control group for comparison. The 19 cases were all men who resided in multiple dormitories and had a mean age of 36 (range=19-59). Symptoms reported included: diarrhea (100%) (19), abdominal cramps (95%) (N=18), chills (95%) (N=18); fever (90%) (N=17), sweating (90%) (N=17), nausea (79%) (N=15), fatigue (74%) (N=14); muscle aches (58%) (N=11), dizziness (53%) (N=10), vomiting (26%) (N=5), numbness or tingling (21%) (N=4), and bloody diarrhea (6%) (N=1). The mean incubation reported was 68 hours (range=49-98 hours) with a mean duration of illnesses of 97 hours (range=51-145 hours). Illness onsets peaked on August 18.

Respondents were surveyed about food items they consumed during the five days prior to the peak in onsets on August 18. Each day, three meals were served. The meal with the highest odds ratios was dinner on August 15, with four items that produced elevated odds ratios (coleslaw, mashed potatoes, broccoli, and gravy). Each item was statistically significant with odds ratios, confidence intervals, and p-values as follows: coleslaw 8.7, 2.1-42.5, p-value 0.002; mashed potatoes 8.5, 1.7-66.7, p-value 0.0075; broccoli 8.0, 1.8-44.2, p-value 0.0043; and gravy 4.68, 1.2-21.6, p-value 0.0281.

The Food Service Manager was interviewed to determine how the foods with elevated odds ratios had been prepared. Both the broccoli and gravy required only minimal hand contact during food preparation. The broccoli was received frozen and reheated. A dry powder mix was used to make the gravy. The mashed potatoes were boiled and a powder dairy mix was added to the final product. The coleslaw, which had the highest odds ratio, was prepared from scratch. To make the coleslaw, staff combined chopped lettuce, carrots, and mayonnaise and hand tossed the mixture in shallow pans. Kitchen staff members were required to wear gloves when preparing the coleslaw, but the manager said it is possible the staff member who mixed the coleslaw did not wear gloves. The majority of the kitchen staff members were inmates of the CI.

During the SCHD environmental assessment completed at CI on August 24, several food safety issues were identified. These issues included a lack of sanitizer detected in kitchen cleaning solutions, improper hand-hygiene by staff members, food storage in non-food grade containers, improper food container labeling, and dirty equipment. During the assessment, one inmate was observed washing his hands without soap and then dried his hands on his shirt. Hand towels were missing near the staff sink. When possible, the issues were corrected immediately on-site.

To prevent further disease transmission, the CI placed a movement restriction on inmates at the facility with GI symptoms starting on August 20. Inmates in dormitories with an isolation and/or restriction were not permitted to participate in visitation and were restricted from attending meals in the dining hall. Strict hand-washing precautions were enforced for inmates, staff, and visitors at the CI.

Carbon Monoxide

Carbon Monoxide Poisonings in Homes with Attached Garages, Palm Beach County, May 2010
In May, the Palm Beach County Health Department (PBCHD) Division of Epidemiology and Disease Control investigated several cases of carbon monoxide poisoning. These cases involved exposure in homes with cars left running in attached garages.

The first incident was reported on May 6. Four individuals were exposed when a car was left running in the garage for one and one half hours. Two women, aged 78 and 82 years, reported symptoms of headache and dizziness and were taken to a local hospital Emergency Room. Their carboxyhemoglobin (COHb) levels tested at the hospital were within normal levels (<9%). Oxygen was administered and they were observed until asymptomatic and then discharged.

The second incident was reported May 19. A woman aged 74 years was exposed when a car was left running in the garage for over three hours. She reported symptoms of dizziness, weakness, headache, and nausea. Testing completed in a local hospital emergency room found a COHb level of 28%. The patient was admitted to the hospital. Oxygen and IV fluids were administered and the individual was discharged asymptomatic the following day.

Throughout 2010, the PBCHD Division of Epidemiology and Disease Control saw an increase in the number of carbon monoxide poisoning cases identified. PBCHD investigated 39 reported cases of carbon monoxide poisoning as compared to four in 2009. Of the cases reported in 2010, 20 cases were related to automobiles left running accidentally in homes with attached garages, nine were related to using improperly vented cooking equipment, two were related to the use of a generator in a boat, and one case occurred as part of a residential fire. Overall, seven of the cases were identified as intentional. There were six carbon monoxide related fatalities of which two were unintentional. All 13 unintentional cases were in people aged >65 years who accidentally left a car running in an attached garage.

In an effort to raise carbon monoxide poisoning awareness within the community and throughout the state, PBCHD coordinated with print, broadcast, and other media to provide prevention information. In addition, PBCHD worked with the state health office to better understand possible automobile related issues and risk factors. Investigations included whether automobiles with push button starters or remote starters and distractions such as cell phone use were associated with the increase in vehicles left running. Results are pending.

Chikungunya Fever

Chikungunya Fever Case Imported from India, Miami-Dade County, January 2010

The Miami-Dade County Health Department was notified of a chikungunya fever case on January 25, 2010. The patient was a woman aged 54 years who had spent one month in India, returning January 5. She developed symptoms on January 9 with neck pain, bilateral shoulder pain, bilateral knee pain, and bilateral wrist and hand pain. The next day she had a fever (up to 103-104 degrees Fahrenheit), chills, headache, and nausea, but no vomiting. On January 11 she developed a generalized maculopapular erythematous rash that began in the face and spread down to her lower extremities and abdomen. She was admitted to a local hospital on January 13 where the physician suspected chikungunya or dengue fevers. Serological studies were ordered to confirm or eliminate these diseases. Results from a commercial laboratory indicated a chikungunya IgM antibody titer of 1:160 and IgG antibody titer of 1:40. Dengue IgG antibody titer was consistent with an acute chikungunya virus infection and past infection with dengue virus. The laboratory specimen was forwarded to the Bureau of Laboratories and then on to the Centers for Disease Control and Prevention where acute chikungunya virus infection was confirmed and dengue infection was ruled-out.

The patient travels every year to India to visit her parents. She never takes any prophylaxis prior to traveling. There were no sick contacts identified. The Mosquito Control Division inspected 52 premises near the case's residence between January 29 and February 1. At that time, two containers (buckets) were breeding *Aedes aegypti* mosquitoes, a competent vector for chikungunya. After discovery, this was corrected and all basins in the area were treated with pesticides.

Infection with chikungunya virus is a risk for travelers to endemic countries, primarily in Asia and Africa. The incubation period is usually 3-7 days, but can be 2-12 days. Symptoms include fever, headache, nausea, vomiting, muscle pain, rash, and joint pain. It can be easily confused with other illnesses such as dengue. The viremic period typically lasts about four days, beginning with onset of symptoms. This woman returned to Florida during that time period, so transmission to local mosquitoes is possible. It is important to notify local mosquito control promptly when cases of chikungunya are identified to limit the potential for local transmission.

Cholera

First Imported Cholera Case in Florida and the United States from the 2010 Epidemic in Haiti, Collier County, November 2010

Cholera is an acute diarrheal illness caused by infection of the intestine with toxigenic *Vibrio cholerae*, a bacterium. A person can develop cholera after eating food or drinking water that has been contaminated with the bacteria. Water or food sources can become contaminated by feces from a person infected with cholera. According to the Centers for Disease Control and Prevention (CDC), an outbreak of cholera was confirmed in Haiti on October 21, 2010. Following the earthquake in Haiti in January 2010, a significant disruption in sanitation, hygiene, and water access had occurred. Although it is not clearly understood how cholera was re-introduced into this region after no documented cases had been noted for decades, the conditions were suitable for such an outbreak to occur.

On November 4, 2010 the Epidemiology and Health Assessment Program of the Collier County Health Department (CCHD) received a report of a suspected cholera case from the Infection Control Department of a major local hospital. The suspected case was in an elderly woman that had returned to Florida from Haiti on November 1 due to diarrheal illness.

The patient had onset of watery diarrhea on October 23, 2010 while visiting her family in Gonaives, Haiti. Gonaives is in the Artibonite Department which was the epicenter of the 2010 Cholera outbreak in Haiti. While in Haiti she had used the community well for drinking and bathing. After returning to Florida, she was hospitalized on November 4 for the management of diarrhea, nausea, vomiting, and abdominal pain. She was treated with doxycycline, intravenous hydration, and antiemetics. She was discharged to her home on November 9. Stool specimens collected at the time of hospital admission were forwarded to the Bureau of Laboratories in Jacksonville and tested positive for *Vibrio cholerae* O1, serotype Ogawa. Specimens were transported to the CDC for further characterization including toxigenicity testing. On November 16, 2010 the CDC confirmed toxigenic *V. cholerae* O1, serotype Ogawa, biotype El Tor which was the same strain found in the 2010 Haitian epidemic.

The patient lived with five other family members: her son, daughter-in-law, and their three children aged 15 and 13 years and 18 months. The daughter-in-law, a previous Certified Nursing Assistant, was knowledgeable on basic infection control procedures. The patient utilized a separate bathroom in the house while symptomatic. The daughter-in-law regularly cleaned the home with bleach after her mother-in-law was discharged home. No secondary transmission occurred as a result of this confirmed case.

Imported Cholera Case from Haiti in Orange County, November 2010

On November 17, 2010 the Orange County Health Department (OCHD) received notification from a local hospital of a suspected cholera case in a nine year-old black girl from Haiti. OCHD began an epidemiologic investigation and found that the patient was born and raised in Haiti. She traveled alone from Gonaives, Haiti to Orlando on November 9. The patient's father stated her symptoms began on November 9 after her arrival in Orlando. The patient had diarrhea, abdominal pain, nausea and vomiting. She was initially seen in the emergency department (ED) at a local hospital on November 11. The patient was diagnosed with diarrhea attributed to an unknown viral pathogen and discharged home. On November 13 she returned to the ED at the same hospital and was admitted due to dehydration, abdominal pain, nausea, vomiting, lethargy, and diarrhea that had become more watery. Upon admission to the hospital it was discovered that the patient had recently moved from Haiti, which prompted *V. cholerae* testing. She was treated and discharged from the hospital once symptoms improved. The patient's father stated nobody else around the patient in Haiti was ill with diarrhea. He did not know what type of water or food she had consumed in Haiti. The patient's household contacts in Orlando remained asymptomatic. Prevention of illness with good hand hygiene was discussed with the patient's father.

The laboratary at the admitting hospital reported light growth of *V. cholerae* from a stool culture on November 17. An isolate from the hospital laboratary was confirmed as *V. cholerae* O1, serotype Ogawa by the Bureau of Laboratories in Jacksonville on November 22 . On November 24, 2010 the isolate was confirmed by the Centers for Disease Control and Prevention as toxigenic *V. cholerae* O1, serotype Ogawa. The strain identified matched the strain found in Haiti which linked the Orange County case to the Haiti outbreak.

On November 29, 2010 OCHD issued a press release about the confirmed cholera case. OCHD enhanced surveillance efforts and disseminated cholera updates and health information to local health care providers in an effort to locate any additional cases.

Dengue Fever

Imported Dengue Fever in a College Student, Alachua County, March 2010

On March 26, 2010 the Alachua County Health Department (ACHD) Epidemiology Program received a report from a local university student health care center of a female university student aged 26 years who traveled to Colombia from March 4 - 12, 2010.

The patient presented on March 19 with symptoms of fever, chills, joint pains, diarrhea, muscle aches, bright red macular and papular rash on her face and upper body, eye pain, nausea, and vomiting. Thrombocytopenia and leucopenia were also noted. Blood drawn for antibody testing was sent to the Centers for Disease Control and Prevention's Dengue Laboratory in San Juan, Puerto Rico. On April 18, IgG and IgM tests for dengue antibodies were positive and dengue virus type 1 was identified.

The patient reported that she and her professor were doing ecology field work in the cities of Medellin and Villavicencio. The patient reported that while she was in Colombia she used DEET intermittently and did not use any mosquito netting. The patient did wear long pants and long sleeved shirts. An interview was also conducted with the professor who traveled with the patient. He reported that he remained asymptomatic. He stated that he was from Colombia and has no history of dengue fever.

Imported Dengue Hemorrhagic Fever, Duval County, May 2010

On June 10, the Duval County Health Department (DCHD) Epidemiology Program received an electronic laboratory result from a commercial laboratory for a man aged 52 years which was IgM positive for dengue fever virus. The patient was previously known to DCHD as a suspected case of typhoid fever.

The man traveled to Costa Rica with his wife from May 15 – 22, 2010 to a remote area in the eastern coastal area of Costa Rica near the Panama border. They rented a home in the jungle, walked through a stream to reach their home, and participated in many outdoor activities, including snorkeling and hiking. The patient and his wife both noted mosquito bites on their legs. The couple moved to a location on the Pacific side of the country after three days.

On May 19, the fifth day of their trip, the patient developed fever, diarrhea, and nausea. He remained in his hotel room for two days and felt well enough to return home on May 22. The next day the patient's fever increased and he complained that his bones hurt. During this time, the patient continued to have intermittent diarrhea and nausea, and did not eat in order to avoid vomiting. The patient went to his primary physician on May 27, and later to the emergency department (ED) after he developed worsening pain in his bones, and his wife noted several short bouts of confusion. The patient was evaluated, treated with quinine and doxycycline, and discharged to his home from the ED. His condition continued to worsen and he was admitted to the hospital on May 30 with body aches, joint pain, loss of appetite, generalized weakness, ringing and pressure in his ears, and a slight rash on the chest. He developed thrombocytopenia and evidence of plasma leakage. He later developed a petechial rash on the extremities and trunk of his body.

The patient was initially reported to Duval County Health Department (DCHD) Epidemiology Program in early June with a positive serum agglutination test (Widal Test) suggestive of typhoid fever. Inquiries were made regarding additional stool and blood specimens, but none had been obtained. The patient did not meet the case definition for typhoid fever. After receipt of the laboratory results suggestive of dengue fever, DCHD requested that the commercial laboratory forward the specimen to the Bureau of Laboratories - Jacksonville for confirmation. The specimen was confirmed IgM and IgG positive for dengue fever.

It is common for individuals with dengue to have non-specific symptoms, like fever, at the beginning of illness and develop more characteristic symptoms like bone pain and rash over the next few days. In severe cases of dengue, the fever often resolves within 2 to 7 days and then warning signs like abdominal pain, vomiting, bleeding, and decrease in platelet count develop, signaling the critical stage of illness when patients may manifest the hemorrhagic fever or shock syndrome associated with infection. If the fever lasts longer than seven days, it is evidence of misdiagnosis or co-infection. In this case the patient may have had both dengue and typhoid fever.

Eastern Equine Encephalitis

Fatal Case of Eastern Equine Encephalitis, Hillsborough County, July 2010
A middle-aged woman from Hillsborough County with previous underlying medical conditions died as a result of Eastern Equine Encephalitis (EEE).

On July 12, the HCHD Epidemiology Program was contacted by the county Medical Examiner after a woman died from encephalitis of unknown etiology. The Medical Examiner asked the HCHD for recommendations for further testing of the frozen Cerebral Spinal Fluid (CSF) of the deceased. The only arboviral test that had been performed at the hospital was for West Nile virus, which was negative. HCHD recommended an arboviral panel and the specimen was sent to the Bureau of Laboratories - Tampa (BOL).

On June 21, the patient presented to the emergency department (ED) with high fever and headache and was admitted to the hospital. She was started on empiric antibiotic therapy with ceftriaxone. She later developed a stiff neck and altered mental status. The patient had a lumbar puncture and results were consistent with meningitis. The patient subsequently developed respiratory failure, which required mechanical ventilation and later died.

On Friday, July 16, BOL reported a strongly positive EEE IgM antibody test from the cerebral spinal fluid of the deceased. The EEE PCR test was equivocal. The clinical presentation and the positive IgM test met the case definition for a confirmed case of EEE. This was the first reported case of EEE in Florida in 2010.

The deceased had no travel history within the two weeks prior to her onset and was also unemployed. Her children reported that she spent significant time sitting outside her home, and she was often bitten by mosquitoes.

During the summer of 2010, both sentinel chickens and horses in Hillsborough County tested positive for EEE. Hillsborough County was already under a mosquito-borne disease advisory; the HCHD reissued the advisory on July 20, 2010. The advisory focused on getting people to protect themselves from mosquitoes. Mosquito control was notified of the EEE case and sprayed the area where the woman was likely infected.

Ehrlichiosis

Ehrlichiosis Imported from North Carolina, Martin County, June 2010

On June 7, 2010 the Martin County Health Department (MCHD) Epidemiology Division received an *Ehrilichia chaffeensis* positive laboratory result from a local hospital. The report indicated that titers for *E. chaffeensis* were IgG <1:64, IgM <1:64. The patient was a white woman aged 79 years who presented with anorexia, nausea, malaise, and a persistent fever (maximum of 101.3 degrees Fahrenheit). Illness onset was May 29.

She had recently traveled to visit her son in North Carolina, returning to Florida approximately one week prior to the onset of symptoms. She noted on May 27 that there were two engorged ticks on her body, which she removed herself. The areas surrounding the tick bite were still erythematous when she presented at the emergency room on June 2.

The remainder of the acute sample was sent to the Bureau of Laboratories - Jacksonville, along with a convalescent serum specimen collected on June 12 for titer comparison. *Ehrlichia chaffeensis* was confirmed with a four-fold rise in IgG titer to 1:256.

Haiti

Reportable Diseases Imported to Florida from Haiti Following an Earthquake, Statewide, 2010

On January 12, 2010 an earthquake struck near the Haitian capital of Port-au-Prince, creating enormous devastation. Florida's close proximity to Haiti resulted in >22,000 people entering Florida from Haiti as part of federal repatriation and humanitarian parolee efforts. Travel between Florida and Haiti has been common for many years and reportable diseases introduced by travelers returning from Haiti are frequently identified. Due to the anticipated large influx of persons into Florida from Haiti after the earthquake, Florida enhanced surveillance efforts for reportable disease cases.

Merlin was used to document cases of reportable diseases in people coming to Florida who were in Haiti at the time of or after the earthquake, regardless of residency. The Outbreak Module within Florida's reportable disease surveillance system, Merlin, was used to capture data on Haitian travel, medical condition upon entry into the U.S., citizenship, and residency. The distribution of reportable diseases acquired in Haiti during the post-earthquake period (January 12, 2010-March 12, 2010) was compared to a 2009 reference period (January 12, 2009-March 12, 2009). Only 20 reportable disease cases imported from Haiti were recorded during the 2009 reference period, with malaria accounting for 15 (75%) and giardiasis two (10%). During the post-earthquake period, 51 cases were recorded in Florida residents, lead poisoning accounting for 21 (41%) cases and malaria 15 (29%). An additional 31 cases in non-Florida residents were recorded during the post-earthquake period, with malaria contributing 13 (42%) and lead poisoning 6 (19%). Malaria cases continued to be imported throughout 2010, with >60 imported cases in Florida residents and non-residents.

Survey data was collected for 64 cases, some in Florida residents and some in non-residents. Upon arrival, 38% of the people with reportable diseases needed acute medical care: of those, 64% required care for their suspected infectious illness, 18% for trauma/injury, 9% for dehydration/malnutrition, and 10% for other reasons.

Merlin allowed Florida to capture cases of disease imported from Haiti in both Florida residents and non-residents, and provided an efficient way to gather additional data on those cases, which could be used for important public health messaging. The influx of people arriving from Haiti resulted in a substantial increase in reportable diseases. A significant minority of cases were detected in people who sought care for other reasons. This type of information may be useful in response planning for similar events in the future.

Hepatitis

Hepatitis A Outbreak in Men who have Sexual Contact with Men, Orange County, May-September 2010
In 2010, there were a total of 19 cases of hepatitis A reported to the Orange County Health Department (OCHD), of which 12 had occurred in men who had sexual contact with men (MSM). Historically, most people with hepatitis A reported in Orange County have traveled outside of the U.S., where exposure was likely. However, none of the 12 affected people in the MSM population reported foreign travel during their exposure period. A common link among all 12 men was not identified. No common food or water source was implicated in this outbreak. A few of the men were sexual contacts or acquaintances of each other. All twelve men reported frequenting several restaurants, bars, and clubs in Orange County. It is possible that hepatitis A transmission occurred through social gatherings. The onset of illness ranged from May 3 to September 11, 2010. Three of the cases were in food handlers and one was in a healthcare worker. The Department of Business and Professional Regulation along with Environmental Health inspected the restaurants and the hospital infection control department was notified of the ill employee. Close contacts of the people with hepatitis A were offered prophylaxis if they were inside the window for prophylaxis.

The Orange County Health Department increased educational outreach in the MSM population. The STD Disease Intervention Specialists distributed information on hepatitis A in the MSM population on field visits to frequented establishments. The Hepatitis Prevention Program coordinator continued vaccination outreach events to high-risk populations, including “Come Out With Pride” on October 10, 2010, “Rainbow Health Fair” on November 6, 2010, drug treatment centers, homeless shelters, and jails. OCHD attempted to publish awareness articles in local newspapers and to coordinate a vaccination outreach event at a local theme park where one of the ill people was employed.

Hepatitis B Outbreak Associated with Home Health Care Agency, Palm Beach County, October 2010
Between October 30 and the end of December 2010, the Palm Beach County Health Department (PBCHD) identified a cluster of three people residing at two Assisted Living Facilities (ALFs) with positive serology results for acute hepatitis B. Two of these resided at ALF 1 and one at ALF 2. The two facilities were linked because they both received skilled nursing services from the same home health agency (HHA).

The exposure period for this outbreak was estimated to be between May 1, 2009 and December 31, 2009. Site visits to both ALFs were conducted to identify potential sources of blood borne pathogen exposure and to evaluate infection control practices, specifically diabetes care procedures. A retrospective analysis of risk factors among the infected and non-infected residents in ALF 1 was done to determine the most probable source of hepatitis B transmission in the facility. Relative risks (RRs), 95% confidence intervals (CIs), and p-values were calculated for the exposures at ALF 1. Medical records review, a behavioral risk factor survey, and a survey of the nurses working for the HHA during the exposure period were conducted. At ALF 2, only specific data were abstracted from the medical records of insulin dependent diabetic residents, based on preliminary results from ALF 1. Testing for hepatitis B was done for all residents at ALF 1. At ALF 2, testing for hepatitis B was done on diabetic patients receiving insulin and glucose monitoring.

Forty-eight residents were tested for viral hepatitis in ALF 1. Five residents were positive for acute hepatitis B. Two residents showed recent infection with hepatitis B virus and were immune. Six cases were diabetic and had received glucose monitoring or insulin administration during the exposure period. Only one case was not diabetic but was the sexual partner of one of the cases. All the cases had resided at the facility longer than six months prior to positive testing. At ALF 2, ten diabetic patients were tested. In addition to the initial acute infected person, who was also a diabetic, a chronic case was found. Molecular gene sequencing performed at the Centers for Disease Control and Prevention showed that the virus from specimens collected at both facilities was identical. Residents in ALF 1 who were diabetic were found to be fourteen times more likely than those who did not, to have acute or recent HBV infection. The association was statistically significant with a p-value <0.05. Other health care procedures did not show an association with HBV infection. Several infection control deficiencies related to diabetes care were found in ALF 1 and 2 including cross-contamination, improper cleaning and storage of glucometers, and lancing devices.

The most probable route of transmission of HBV in ALF 1 was from resident to resident during fingerstick glucose monitoring and/or insulin administration. The HBV DNA sequencing results among residents in ALF 1 supported the hypothesis of transmission within the facility. Epidemiologic data and infection control deficiencies found during the site visits also support this hypothesis. Transmission *between* the two facilities was also supported by the HBV DNA molecular sequencing results, the infection control deficiencies, and the movement of nursing personnel between the two ALFs evidenced in the review of the HHA nurses schedules. Furthermore, the results of the HHA nursing survey showed that some of the HHA nurses used the same lancing device and glucometer for several residents.

Based on the findings during the investigation, several recommendations to the administrators of the ALFs and the HHA were provided. Hepatitis B vaccination for all susceptible residents at ALF 1 and susceptible diabetic residents receiving glucose monitoring in ALF 2 was implemented. Training on infection control for bloodborne pathogens and diabetes care procedures was recommended and completed by the HHA nurses. The facilities changed the use of spring-loaded reusable finger stick devices to auto-disable, single use lancets to collect specimens for glucose monitoring. No new cases were reported after the last testing was conducted during the investigation.

Hepatitis C Cluster Associated with a Healthcare Facility, Duval County, 2010
Three cases of hepatitis C infection occurred over a three-year period in patients treated at a Duval County healthcare facility. An epidemiologic investigation in coordination with the healthcare facility, the Florida Department of Health, and the Centers for Disease Control and Prevention determined that the three hepatitis C virus strains from these cases were genetically related. The three cases did not have any behavioral risk factors for infection or any obvious lapses in infection control at the healthcare facility. In 2010, the investigators focused on the interventional radiology area since all three patients had undergone procedures within that area at different times over the three-year period. An employee in the interventional radiology unit tested positive for the hepatitis C virus in the spring of 2010. On July 26, 2010 the hepatitis C virus strain from the employee was found to be genetically related to the strains from the three patients. The healthcare facility launched an internal investigation and the employee admitted to drug diversion in the interventional radiology unit. The healthcare facility sent over 3,200 letters to individuals who may have been at risk due to this former employee's actions, and recommended testing for blood borne pathogens.

Influenza

Influenza A Outbreak at a Correctional Detention Center, Miami-Dade County, March 2010
On March 16, 2010 the Miami-Dade County Health Department (MDCHD), Epidemiology, Disease Control and Immunization Services (EDC-IS) received a report from a local detention center nurse that five inmates had been admitted to a local hospital with influenza-like illness (ILI): two inmates out of 68 in one unit, and three inmates out of 62 in another unit. After further investigation with the infection control practitioner of the correctional facility, it was determined that there were a total of nine inmates involved in this outbreak.

Based on investigations with the detention center, the earliest onset of symptoms was March 9. Five inmates at the detention facility were sent to a local hospital, were admitted, and had positive rapid tests for influenza A. The Bureau of Laboratories - Miami branch confirmed three specimens positive for 2009 influenza A H1N1. One inmate who tested negative (rapid test) for influenza was also sent to the hospital, but was not originally reported. Three additional inmates from different units, with symptoms of ILI, also tested negative and were not sent to the hospital. All ill inmates were part of the general inmate population. Those who had been in contact with the sick inmates were put on restrictive movement.

A recommendation letter was sent to the correctional institution encouraging good hygiene practices among inmates and staff and removal of symptomatic inmates from dormitories until at least 24 hours after fever has ceased. No additional cases were identified.

Workplace Cluster of Influenza, Palm Beach County, May 2010

On May 5, 2010 the Palm Beach County Health Department (PBCHD) received a report of several workers experiencing respiratory symptoms at a local business. The report was triggered by a positive influenza A H1N1 PCR in one of the workers and the increasing number of employees reporting illness. A private physician diagnosed the positive individual with influenza-like Illness (ILI) on April 30, 2010 and a positive influenza A H1N1 PCR result was reported on May 5, 2010. The worker was not hospitalized.

There were 83 exposed employees congregated in a two-story building. The main area reporting sick workers was located on the north side of the first floor of the building. An individual was classified as having a case of influenza-like illness (ILI) if they reported having fever of >100 degrees Fahrenheit plus cough, sore throat or other respiratory symptoms. Between April 30 and May 7, 2010 twenty-seven workers were classified as having cases (attack rate 29%). The Guidance for Businesses and Employers to Plan and Respond to the 2009 – 2010 Influenza Season was provided to the employees' physician for implementation. By Friday, May 7, 2010 all the ill workers had been excluded from work and advised to return to work according to Centers for Disease Control and Prevention (CDC) guidelines. Symptomatic employees were recommended to see their private physician to evaluate need for treatment and to obtain a nasopharyngeal swab for PCR testing.

The non-ill workers were provided information about ILI symptoms, and were advised to see their private physician and stay home if they became sick. Measures such as routine environmental cleaning, instruction on proper hand washing, respiratory etiquette, and hand sanitizer availability were implemented. Screening employees who reported to work for ILI was conducted daily. As part of the outbreak control measures, the PBCHD provided the H1N1 vaccine to the employees' physician office in order to vaccinate non-ill workers who were not previously vaccinated. Thirty-nine doses of the vaccine were administered between May 6 - 11. No new cases were reported after May 11, 2010. No nasopharyngeal swabs for PCR testing were ordered by the primary care doctors who saw symptomatic workers.

Investigation of a Multi-State Influenza Outbreak in a Medical Missionary Group, Statewide, July 2010

On July 28, 2010, a St. Johns County resident aged 70 years was confirmed PCR-positive for H3N2 influenza A by the Bureau of Laboratories (BOL). Vigilance for, and follow-up on, unusual influenza results was heightened due to the recent influenza pandemic. Summer months are not typical periods of influenza activity. Because of this, the St. Johns County Health Department (SJCHD) investigated the laboratory result.

The individual had been part of a medical mission group to Panama from July 16 - 24. The group consisted of approximately 75 missionaries from multiple states, including 10 Florida residents. A church in Georgia sponsored the medical mission as part of their Central American missions program, and the patient gave SJCHD the contact information for the trip coordinator.

The Bureau of Epidemiology contacted the Georgia Department of Community Health, Division of Public Health (DPH), and notified them of the mission trip and the trip coordinator's contact information. After interviewing the trip coordinator, a Georgia resident, the Georgia DPH found that the mission group travelers came from 10 states across the southern U.S., and the trip coordinator reported that missionaries from other states also became ill after the trip. Georgia DPH notified the Centers for Disease Control and Prevention (CDC), Influenza Division, as well as influenza coordinators in affected states, and collected data on influenza-like illness (ILI) in the travelers from each state.

SJCHD followed up with all 10 Florida residents who traveled to Panama as part of the mission trip. It was not possible to collect additional specimens, but interviews showed that seven of the 10 Florida travelers experienced influenza-like illness (ILI) symptoms as early as July 24, including weakness/malaise, sore throat, cough, fever of 101-102 degrees Fahrenheit lasting 4 to 5 days, sporadic diarrhea, and less commonly, headache and chills. A household contact of one of the travelers also became ill and tested rapid-antigen positive for influenza A.

In total, 19 of the 75 missionaries from five of the 10 states became ill with ILI following the mission trip. One non-Florida resident received a rapid influenza test, and tested negative. No other travelers were tested.

Klebsiella pneumoniae

Outbreak of Infections Due to Carbapenem-resistant *Klebsiella pneumoniae* (CRKP) in a Long-term Acute Care Hospital in a Central Florida County, July 2010

Carbapenems are a class of β-lactam antimicrobials with broad-spectrum activity that are often used as a last-line treatment for serious healthcare-associated infections caused by *Enterobacteriaceae* and other bacteria. In recent years, carbapenem-resistant *Enterobacteriaceae* (CRE), which are commonly resistant to almost all antimicrobial agents, have emerged worldwide. CREs are associated with substantial morbidity and mortality and are difficult pathogens to control as they spread easily within healthcare settings. Resistance to carbapenems in the U.S. is most often mediated by the production of the *K. pneumoniae carbapenemase* (KPC) family of serine β-lactamases. KPC enzymes are found on plasmids, confer resistance to all β-lactam antimicrobials, and are the primary mechanism for carbapenem resistance among CRKP.

During July 2010, the Florida Department of Health (FDOH) was contacted by staff at a long-term acute care hospital (LTACH A) in a central Florida County regarding the identification of CRE. LTACHs are extended-stay hospitals that care for complex patients who most often are transferred from acute care hospital intensive care units (ICUs) for continued management of chronic, intensive medical needs (e.g., ventilator dependence, chronic wounds, and intravenous medications).

Staff from the responsible county health department (CHD) and FDOH met with staff at LTACH A to review infection control procedures and recommended implementing CDC's guidance for preventing CRE in acute care facilities (http://www.cdc.gov/mmwr/preview/ mmwrhtml/mm5810a4.htm), including conducting a point prevalence survey for CRE via rectal swabs. In August, after 10 (25%) of 40 patients who underwent active surveillance testing at LTACH A were found to be positive for CRKP, FDOH and CHD staff again met with the facility staff and presented an action plan to prevent further CRE infections and transmission. In addition to improving infection control practices, the plan included continued active surveillance testing for CRE at admission, active surveillance testing at two-week intervals for all patients not known to be positive for CRE, and maintenance of a running line list of CRE positive patients.

CRE has been present in LTACH A and acute care hospitals in the surrounding area since 2009, and transmission of CRE is ongoing in LTACH A. Ninety-nine LTACH A-onset CRE cases have been detected since March 2009, 34 were classified as probable transmission CRE cases detected since August 2010. The number of blood cultures positive for multi-drug-resistant organisms in LTACH A was as high as 10 per month. CRE cases have made up a substantial proportion (10-50%) of these since 2010, suggesting that transmission of CRE is associated with infections causing morbidity and mortality. CRE is also being imported into LTACH A from other facilities, contributing to the overall burden of CRE in LTACH A, increasing the risk of transmission. Molecular typing suggests a dominant strain for the majority of isolates tested. Since few samples were obtained from patients who were positive at admission to LTACH A and other LTACHs, and because the diversity of *K. pneumoniae* isolates in this and surrounding counties is not known, we are unable to determine if the same strain of *K. pneumoniae* has been circulating among other healthcare facilities.

Lapses in multiple infection prevention practices, including hand hygiene, personal protective equipment use, device maintenance, and environmental cleaning practices, likely are contributing to transmission of CRE in LTACH A. Increased attention to infection prevention practices in LTACH A and among facilities across the healthcare continuum in this county and Florida are needed to prevent transmissions and infections associated with CRE.

Legionellosis

Legionnaires' Disease Outbreak Associated with a Health Fitness Club, Orange County, April 2010
On April 5, 2010 the Orange County Health Department (OCHD) Epidemiology Program was notified by a local hospital of a laboratory-confirmed case of Legionnaires' disease with illness onset on March 31. During the interview, the aged 72 years man reported frequenting a local fitness club every day until March 30. He did not report having any water exposures. On April 7, the OCHD Epidemiology Program was notified of another laboratory-confirmed case of Legionnaires' disease with illness onset of April 2. This aged 69 years woman reported frequenting the same fitness club as the previously reported patient three times a week, with the last exposure on March 31. The patient reported exposures to the pool, whirlpool spa, and shower.

An environmental health inspection of the fitness club was conducted on April 9 in response to the initial *Legionella* case and found multiple violations. As a result of the potential cluster of two or more similar illnesses linked to a common source, the OCHD Epidemiology Program initiated further investigation. The facility was re-assessed on April 13. Based on the environmental assessment and epidemiological data, environmental samples were collected from the whirlpool spa, water filter, and from the interior of the shower heads in both the male and female showers, and shipped to the Bureau of Laboratories for analysis. All environmental samples obtained from the fitness club collected on April 13 were culture negative for *Legionella pneumophila*.

Epidemiologic data indicate that the source of the *Legionella* outbreak was the fitness club in Orlando, Florida. The only common exposure that may contribute to Legionnaire's disease among the two cases was visiting the facility during the 14 days prior to the reported illness onset. Environmental inspection observations at the fitness club whirlpool spa indicated conditions that could possibly support biofilm production and the harboring of *Legionella* bacteria. Maintenance logs consistently indicated chlorine levels in the spas below 2.0 ppm from March 20 to March 27 (recommended levels are between 2.0 -10.0 ppm).

Legionnaires' disease is a common cause of community-acquired pneumonia, with an estimated 8,000 to 18,000 cases in the United States each year. This disease is caused by *Legionella* bacteria, which can be found naturally in the environment, particularly in the type of warm water found in whirlpool spas, cooling towers, hot water tanks, large plumbing systems, or parts of big air conditioner systems of large buildings.

Malaria

Imported Malaria in a Flight Attendant, Hillsborough County, July 2010
On July 16, 2010 the Hillsborough County Health Department (HCHD) Epidemiology Program was notified by the Bureau of Epidemiology of a discharge diagnosis of "malaria" found in ESSENCE, Florida's syndromic

surveillance system. Follow up with the hospital determined that the patient did in fact have malaria and the case had not been previously reported.

A woman aged 35 years worked as a flight attendant for a major U.S. airline. Her recent travel history included multiple layovers in Abuja, Nigeria and one layover in Dakar, Senegal. Her last three-day layover was in Abuja and ended on July 6.

On July 13, the patient developed night sweats. On July 14, she experienced one bout of diarrhea as well as a headache. She presented to the emergency department on July 15 with a fever of 102 degrees Fahrenheit, chills, profuse sweats, neck pain, fatigue, mild nausea, and mild abdominal pain. The patient was concerned that she had malaria because she had not taken antimalarial medication while in Africa, and several of her coworkers (pilots and flight attendants) who fly this route had developed malaria in the past two years.

The malaria smears were positive at the hospital laboratory (0.2% parasitemia). The slides were forwarded to the Bureau of Laboratories - Jacksonville where the species was identified as *Plasmodium falciparum*. The patient was treated with doxycycline and the anti-malarial drug atovaquone-proguanil.

The patient was interviewed by HCHD staff. She reported difficulty in taking anti-malarials with her work schedule. She reported that she would need to be on them nearly all the time. She also stated that it is logistically difficult to get to a physician all the time for requisite prescriptions. While on her layovers in Nigeria, she does not leave the hotel. She occasionally visits the pool in the late afternoon. She does use a DEET based mosquito repellant or a anti-mosquito clip-on belt. She did not recall any mosquito bites. The patient recovered and was discharged from the hospital on July 21.

Upon learning of the malaria diagnosis on July 16, mosquito control was contacted and sprayed the area where the patient lives.

Measles

Measles Case in an Adult Traveler, Duval County, June 2010
On June 2, 2010 a physician notified the Duval County Health Department (DCHD) Epidemiology Program of a suspected measles case. The physician's patient aged 63 years reported a fever onset on May 8, a rash onset on May 11, and cough, anorexia, conjunctivitis, coryza, and severe malaise that continued for at least three weeks after symptoms onset. Initial laboratory tests done by a commercial laboratory on May 24 were positive for IgM and IgG against the measles virus and were subsequently confirmed positive at the Bureau of Laboratories - Jacksonville (BOL). A second serum sample was requested by BOL, and drawn by DCHD on June 4. The second specimen was also positive for measles IgM and IgG.

The man had no measles vaccination history but did have natural immunity to varicella and mumps. He lived in Chile, Venezuela, and Mexico until he was aged 13 years and moved to the U.S. in 1960. His exposure period was estimated to be from April 23 to May 4. During this estimated exposure period, the patient and his wife traveled to Italy and Switzerland from April 15–26, 2010 with a tour group of approximately 30 people. Neither the man nor his wife noticed anyone ill on the trip or after they returned to Jacksonville. The man went to the doctor on April 29 for a leg infection and was treated with an antibiotic. He returned to the doctor for two appointments during the time when he could have potentially exposed other people. Due to the antibiotic prescribed on April 29 for the leg infection, the initial diagnosis by the physician was a drug reaction. When the patient returned to the office with a rash, the physician ordered testing for measles and advised the case to practice self-isolation.

All of the identified contacts were interviewed including: the tour group manager, the physician office staff and patients, family members, fellow employees, and the manager of a local business where the patient and a family member had spent time together. No other measles cases were found during the investigation.

Meningococcal Disease

Fatal Meningococcal Disease in a Student, Collier County, November 2010

On November 25, 2010 the Collier County Health Department (CCHD) received a report from the infection control nurse at a local hospital that a man aged 20 years died, and the emergency room physician suspected it was due to meningococcemia. When he presented to the hospital emergency department at 11:10 pm on November 24, the young man was awake, but the nurse was not able to obtain a blood pressure. His skin was cold, mottled and cyanotic. Seventeen hours prior to arriving at the hospital, he had onset of nausea, vomiting, and diarrhea, followed later (6:00 pm) by fever, light-headedness and a rash. Blood cultures were obtained and antibiotics were administered. The patient became unresponsive and resuscitation was attempted, but was unsuccessful. He died less than 20 hours after onset of symptoms.

The patient was a student at a state university located in another county, and had received meningococcal disease vaccination in 2008. He was a member of a fraternity at school and resided in a house with three roommates. While attending school, he worked at the school recreation department approximately two hours per day. He also refereed football and soccer games at night. He rode for several hours in a car with a friend traveling from school to Naples on November 20, and then stayed at his parents' home in Naples. He attended many gatherings while in Naples.

CCHD interviewed 73 people, and the investigation identified 46 close contacts who received antibiotic prophylaxis. The County Health Department serving his university spoke with a roommate and fraternity brother who reported the patient visited the fraternity house about once a week although sometimes more frequently. The president of the fraternity was also contacted. He reported the fraternity brothers were aware of the patient's death and they had contacted their private physicians to obtain prophylaxis. The Palm Beach County Health Department assisted CCHD with prophylaxis for the patient's three roommates who were in Palm Beach County for the holiday weekend. The hospital provided prophylaxis to 18 staff members.

The blood culture collected at the local hospital was positive for *Neisseria meningitidis*, and forwarded samples to the Bureau of Laboratories - Jacksonville. On December 7, BOL confirmed the isolate was *N. meningitidis* Group B. The meningococcal vaccine in use in the United States does not protect against Group B infection. This is the first confirmed case of *N. meningitidis* infection in Collier County since 2005.

Mercury Poisoning

Mercury Exposure in a Neighborhood, Broward County, August 2010

On August 30, 2010 the Broward County Health Department (BCHD) Epidemiology Program followed up on a news media story from August 29 involving people exposed to mercury at a residence in Broward County. The exposure had reportedly taken place on August 28 when a neighbor found bottles of mercury in the garage of a house he had recently purchased. Children had been seen playing with the mercury in a neighborhood driveway. Eleven people were identified as being directly exposed to the mercury through inhalation and/or skin contact. BCHD was able to contact ten of these. None were symptomatic.

Of the ten people interviewed seven had laboratory testing performed (one urinalysis and six blood mercury levels). Mercury was not detected in urinalysis. The blood mercury levels on all six individuals were reported as elevated over the expected value which is <8.0 mcg/L (range 14 mcg/L to 25 mcg/L).

Abatement efforts were initiated August 31, 2010 when Florida Department of Environmental Protection (FLDEP) began the initial assessment of affected areas, including private homes and the driveway where exposure to the mercury had occurred. Five schools, the public library, 10 public vehicles, five school buses, and one additional driveway were assessed as potentially impacted areas.

According to the EPA Pollution/Situation Report dated September 3, 2010 contractors hired by the EPA applied a solution called Hg Cs-102, allowed it to dry, and then used mercury vacuums to remove mercury beads from two driveways in the neighborhood. One driveway was removed as mercury presence was too extensive for abatement. Affected residences had ventilation fans brought in to aid in air exchange. One residence was found to have mercury in the shower, sink drains, and the washing machine. Hg Cs-102 was poured in the drains and washing machine to alleviate mercury vapor being released. Another residence had to remove furniture and other small items that had been contaminated, as well as the carpet and a tiled area. Following the carpet removal, the floors were thoroughly rinsed and the property was ventilated. The items collected from the households were inventoried and taken off-site to reduce the ambient mercury vapor readings. In places where mercury was found during rescreening, properties were mopped with Hg Cs-102 or had an EPA approved mercury scrubber installed, which processes ambient air and removes mercury gas.

Mercury Poisoning in a Four-Year-Old, Hillsborough County, November 2010

On November 18, 2010 the Hillsborough County Health Department (HCHD) Epidemiology Program received a report from a hospital regarding a boy aged four years. The patient presented to the hospital on November 15 with a four day history of productive cough, difficulty in breathing, and sore throat. The patient received a preliminary diagnosis of bronchitis.

An X-ray and computed tomography (CT) scan showed that the child had metallic densities in the lungs. The doctors speculated that the foreign bodies in the chest had been aspirated. There were similar findings in the liver and colon. A colonoscopy revealed liquid, elemental mercury balls in the patient's large intestine, appendix, and stool. Mercury levels obtained from a blood sample were 34 ng/mL. The child tested negative for other heavy metals such as arsenic and lead.

On November 19, the HCHD spoke to the Medical Director of the Florida Poison Information Center (FPIC) and the infection control practitioner at the hospital to review the plan for the patient. At this time, the child was asymptomatic and was discharged from the hospital. Discharge instructions stated that the child was not to return to his home until an environmental assessment of the home had been performed. On November 22, the HCHD interviewed the mother of the boy. The boy and his family were staying in a hotel at that time. The mother denied all mercury exposures, including liquid thermometers, older toys and mercury batteries. The child attended a local daycare, which was initially a concern for potential mercury exposure. Additionally, the patient's father works as a janitor at a local hospital, which brought up concerns regarding occupational exposures.

There were eight residents of the patient's home. Two of the eight residents were small children, aged one and four years. Both of these children were asymptomatic, and unrelated to the patient. They were separated physically from the patient and his family through a partition in the home. The mother of these two children stated they had never been inside the boy's bedroom.

On November 23, representatives from the HCHD and the Department of Environmental Protection (DEP) met at the boy's home to test for residential mercury levels. For residential properties, a mercury vapor reading of over 1000 ng/m3 necessitates a cleanup and removal by the Environmental Protection Agency (EPA). Readings of the boy's bedroom on November 23 were 15,000 ng/m3. One dresser drawer in the boy's bedroom read 50,000 ng/m3. The HCHD contacted the Regional Emergency Response Advisor, the DEP

Emergency Response, and then the National Response Center. The family was subsequently relocated to another hotel at EPA's expense until cleanup and potential remediation were performed.

The other portions of the home had mercury vapor readings within normal limits. The abnormally high mercury vapor readings were confined to the boy's bedroom and adjacent areas. Still, the HCHD recommended evaluation and testing for the children who were household contacts. Both children were evaluated, but only one received testing for mercury. The results were negative.

From November 24 to December 1, an EPA response team was deployed to the patient's home in Tampa for cleanup. The EPA found a few mercury beads underneath the dresser in the child's bedroom, and a substantial number of beads inside the dresser drawer. The EPA removed the dresser from the patient's home and allowed the home to ventilate for approximately one week. On December 1, a subsequent mercury vapor reading was performed and results inside the patient's bedroom were approximately 600 ng/m3, which is below the level requiring urgent action. When the windows of the home were opened, the level dropped to 100-200 ng/m3.

On December 2, the family was contacted regarding these results and allowed to move back into the home. On December 3, the patient was seen for a clinical visit by the Medical Director of the FPIC. Because x-rays continued to show mercury in the lungs and appendix of the child, oral chelation therapy was recommended and completed.

Despite repeated attempts to establish the source of the mercury beads inside and underneath the child's dresser, the source was never determined.

Norovirus

Norovirus Outbreaks in Long-Term Care Facilities, Collier County, Florida, January – April 2010
From January through April 2010 the Collier County Health Department (CCHD) experienced a tremendous surge in the number of reported norovirus outbreaks and related cases resulting in the highest incidence of the virus recorded locally in public health records.

Beginning in early 2010, the CCHD began to receive reports of gastrointestinal outbreaks from multiple long-term care facilities. During the four month interval from January through April 2010, 16 outbreaks were reported from 12 different long-term health care facilities. Analysis of aggregate data from the 12 institutions indicate that the overall attack rate in all outbreaks combined for residents of these sensitive facilities was 31.6% (380 ill out of a total of 1,201 persons at risk). The combined attack rate for staff was 8.1% (119 ill out of a total of 1,462 employees at all affected facilities). The range of attack rates for residents varied widely by facility, from 12.3% to 75.5%, while staff attack rates were lower, 0% to 30.8%. Testing by the Bureau of Laboratories revealed that all sampled specimens were positive for norovirus G2 virus.

The average of the median duration of illness (from onset date to cessation of symptoms) from all facilities combined was 50.6 hours for residents and 39.75 hours for staff. This falls within the 24 - 72 hour expected classical clinical symptomatic range for duration of norovirus. During this four month outbreak, there were eight deaths in the effected facilities. The reported case fatality proportion for these aggregated outbreaks during this four month period was 2.1%. This case fatality proportion is near the expected value when compared with recent studies of mortality in elderly patients following norovirus infections where 30-day case fatality proportions ranged from 1.6% for those patients aged 60-69 years to 14.2% for patients aged 90 years and older.

These multiple coincident Norovirus outbreaks prompted the Epidemiology and Health Assessment Program of the CCHD to implement an aggressive targeted health education initiative for nursing, as well as other staff of long-term care facilities in the county, on the prevention, control, and reporting of norovirus and other enteric diseases. This project, which began in 2010, will continue on an annual basis through at least 2015.

Pertussis

Pertussis in a Boy with Travel to a Boy Scout Camp in North Carolina, Sarasota County, July 2010
On July 26, a PCR confirmed case (Case 1) of pertussis in a boy aged 11 years was reported to the Sarasota County Health Department (SCHD). His symptoms began on June 19 after he returned from a Boy Scout camp in North Carolina. Symptoms initially consisted of a sore throat. The boy was taken to the doctor on June 24 and was prescribed amoxicillin. Symptoms progressed to include fits of coughing and the boy was taken to the doctor again on June 29. During this visit he was given cough syrup. The boy traveled by plane to Chicago with his father sometime between June 29 and July 11, the mother was unable to recall the dates of the flights. After returning, the boy was still experiencing fits of coughing and went to the doctor on July 11. During this visit, a chest x-ray was done and the doctor diagnosed pneumonia and referred the boy to a pulmonologist. On July 21 the pulmonologist reviewed the x-ray and determined that it was not pneumonia, and taking into account the symptoms, diagnosed pertussis and ordered laboratory testing. According to the mother no other family members experienced any symptoms. The mother, father, and sister all received prophylaxis. The boy had previously received all five recommended doses of pertussis-containing vaccine.

Suspected exposure occurred at Boy Scout Camp A in North Carolina between June 12 and 19. During this trip the scouts slept in two-man tents and were with scouts from other regions of the country. During the investigation Bureau of Immunizations contacted the North Carolina Department of Health to notify them of the potential exposure at Camp A.

In discussing this with the Scoutmaster for this troop, a second case was identified. Case 2 was in an unvaccinated boy aged 11 years who traveled with the first boy to and from Boy Scout Camp A in the same vehicle. These two boys also shared the same two-man tent while at the camp. The second boy's symptoms began on June 15 as a sore throat and general malaise. His cough began on June 23 and progressed to fits of coughing and post-cough vomiting.

The second boy was initially treated with homeopathic medications and was taken to the doctor on July 1 after his cough became worse. The doctor did not perform any laboratory testing. He prescribed cephalexin for 14 days, which was completed.

During the interview (July 30) the mother of the second child indicated she also was experiencing symptoms. Her symptoms began on July 12 with a sore throat and malaise. Her cough began on July 19, which progressed to fits of coughing and an episode of post-cough vomiting. She was advised to seek medical care. The mother was subsequently lost to follow-up and was not reported as a case. The grandmother of the second boy also experienced cold-like symptoms that began on July 20 and some intermittent coughing that began shortly thereafter. She was advised to seek medical care. The grandmother did not meet case definition and was not counted as a case. No additional ill contacts or family members were reported.

During this outbreak control measures included: isolation of cases, initiation of proper antibiotic treatment, targeted antibiotic prophylaxis, and education on vaccine importance.

Pertussis Outbreak Associated with a Residence Shelter, Duval County, August 2010
On August 17, 2010 Duval County Health Department (DCHD) Epidemiology Program was notified of two

PCR-confirmed pertussis cases in siblings aged eight and nine years who resided with their family in a shelter. Onset of symptoms began on August 2 and 14, respectively. Each child had received the age-appropriate five doses of DTaP vaccine. Both children used nebulizers for periodic mild asthma symptoms. The father also developed symptoms, with an onset of July 19. The family had lived at the shelter for approximately one month.

The investigation included follow-up at two shelters, three child care facilities, a summer camp (associated with a shelter), the father's supervisor at work, the secondary cases, and other close personal contacts. Eight confirmed cases were identified in the outbreak, four were PCR-positive, and four were confirmed by epidemiologic link. A PCR-positive child aged six years, who was a contact of the siblings, also had a history of five DTaP vaccinations.

Control measures used for the outbreak were: notification by phone about the illness, education and preventive efforts by phone, fax, fliers and mail, and follow-up surveillance for ill persons. The Florida Bureau of Immunization provided Tdap vaccinations for further outbreak control at the shelters. No further cases associated with this outbreak were identified.

Pertussis Outbreak Associated with a Local K-7 School, Sarasota County, December 2010
On December 10, 2010 the Bureau of Epidemiology reported two PCR-confirmed cases of pertussis to the Sarasota County Health Department (SCHD) on-call epidemiologist. Case A was in a boy aged 11 years and Case B was in his brother aged four years, neither of whom was vaccinated. Case A attends a K-7 school in Sarasota. The school has a population of 411 students of whom 6.1% (n=25) have a religious exemption and have partial or incomplete pertussis vaccination.

Case A developed a cough on November 29 and experienced fits of coughing and post-tussive vomiting. He was taken to the doctor on December 7 and diagnosed with pertussis, and was prescribed zithromax. Case B was diagnosed with pertussis and prescribed zithromax at the same visit. During the visit, specimens were taken for laboratory testing. Prophylaxis was recommended for family members. No other contacts were identified during the interview and the parents isolated the brothers while they were sick.

The school nurse at the K-7 school where case A was enrolled was notified of the case due to concerns associated with the high rate of no or incomplete vaccination among the student population. Active surveillance was initiated. A letter was drafted by SCHD and sent home with students on December 14 to notify parents of their child's potential exposure to pertussis. Cases C, D and E were identified via active surveillance. Cases C and D met the probable case definition, with cough greater than two weeks and post-tussive vomiting. Case E was identified as meeting the suspect case definition with a cough lasting less than 14 days. This last child was up-to-date on vaccinations and was lost to follow up. There was no known contact between Cases A and B, and any of the other cases. Additionally, there is no known contact between cases C, D, and E. Case C and D were seen by their provider and neither was tested for pertussis. Winter break began on December the 20 and ended December 31. No cases were identified after the break.

During this outbreak disease control measures included, exclusion of cases from school, parental education, targeted post exposure prophylaxis and immunization, and active surveillance.

Salmonellosis

***Salmonella* Anatum Associated with a Wedding Reception, Sumter County, April 2010**
On April 19, 2010 the Sumter County Health Department and the Regional Environmental Epidemiologist for North Central Florida were notified of a cluster of Gastrointestinal (GI) illnesses following a

wedding reception in Sumter County. The reception was hosted at a community center in Lake Panasoffkee on April 17 at 5:00 pm. Approximately 68 guests attended the dinner.

A list of names and telephone numbers of reception attendees was obtained. The outbreak case definition included attendees who developed either diarrhea or vomiting within 72 hours of attending the reception. Both ill and non-ill persons were interviewed using the standardized food and waterborne outbreak questionnaire to assess food and other exposure histories. A food-specific section of the questionnaire was designed based on the menu of items served at the event. Symptoms reported by the 37 ill attendees included: diarrhea (100%), abdominal cramps (97%), fatigue (89%), fever (81%), headache (76%), nausea (76%), chills (65%), vomiting (62%), sweating (58%), muscle aches (56%), dizziness (38%), and numbness or tingling sensation (8%). A mean incubation period of 21 hours (median=18.5 hours, range=9.5-67 hours) was reported. The mean duration of illness was 57 hours (median=57.5, range=9-120 hours). In total, 15 (41% of the total) attendees received medical treatment for their symptoms.

Six specimens were collected from ill persons and shipped to the Bureau of Laboratories - Jacksonville (BOL) for both enteric and viral testing. An additional seventh sample was tested by a private laboratory after an attendee was hospitalized. Food samples of left-over meats (pork and chicken) were shipped in sterile plastic bags to BOL and tested for *Staphylococcus aureus*, *Clostridium perfingens, Salmonella species*, and *Bacillus cereus.*

All six human stool samples submitted to the BOL tested positive for *Salmonella* Anatum. The two food samples submitted (chicken and pork) also tested positive for *Salmonella* Anatum. These isolates had a pulsed field gel electrophoresis (PFGE) pattern identical to that observed in the six human samples. One additional stool sample tested positive for *Salmonella* at a private laboratory, but was not tested at BOL.

Due to the receipt of a positive laboratory result in both the chicken and pork and the potential for cross contamination to occur during preparation, it was unknown which meat was the primary source of the *Salmonella* Anatum. Statistical analysis gathered through epidemiologic interviews indicated that the pork and baked beans were statistically associated with illness. The environmental assessment and interview with the chef who prepared the chicken and pork identified several practices and procedures that may have compromised food safety such as cross-contamination of the chicken and pork and time-temperature abuse.

Shigellosis

Shigella sonnei Outbreak at a Mexican Restaurant, Alachua County, August 2010

In August 2010, the Alachua County Health Department (ACHD), Regional Environmental Epidemiologist (REE), and Department of Business and Professional Regulation (DBPR) received multiple illness complaints from several unrelated parties who dined at the same Mexican restaurant in Alachua County. A total of 36 restaurant patrons were identified from four separate parties who dined at the restaurant on either August 9 or 10. A total of 18 were reported ill, of whom 15 were interviewed. Fourteen ill patrons dined at the restaurant during the same two-hour period on August 9 and the other four dined on August 10.

An outbreak case definition was developed, which included patrons who dined at the restaurant from August 7-10, 2010 and developed illness with diarrhea and/or vomiting within 72 hours. All 15 patrons interviewed met the case definition for the outbreak. Symptoms reported included: diarrhea 100% (15), fever 100% (15), cramps 87% (13), fatigue 87% (13), weakness 80% (12), chills 80% (12), nausea 73% (11), sweating 73% (11), headache 67% (10), bloody diarrhea 67% (10), vomiting 40% (6), and dizziness 40% (6). Five persons received medical treatment. The mean duration of illness was 174 hours or seven days (range=120-240). A mean incubation period of 46 hours was reported (range= 25-67). Five patrons tested positive for *Shigella sonnei,* two patrons had their specimens tested at the Bureau of Laboratories - Jacksonville, and three by a private laboratory.

The ACHD, DBPR, and REE conducted a joint environmental assessment at the restaurant. Several food safety violations were identified and reported to management, such as temperature abuse in a freezer, cross-contamination of raw and ready-to-eat chicken, and poor employee hand-washing practices. Employees reported that the freezer was defrosting throughout the day and a subsequent repair of a crack in the condenser was completed. The unit was not permitted to be used until it was fully repaired. In addition, one wait-staff employee, who also works at a day-care center, reported having recent GI symptoms but denied preparing food or working during the dates when the cases visited the restaurant.

The restaurant's manager was required to enforce the restaurant's sick leave policy and restrict employees from working while ill and 72 hours after their symptoms resolved. The manager was instructed to reduce the risk of cross-contamination by enforcing that grill cooks use separate utensils for cooking raw and ready-to-eat foods. Management was asked to observe staff hand-washing practices, enforce effective hand hygiene, and required to repair the freezer unit. A second joint environmental assessment was conducted to ensure that all requests were completed.

Shigellosis Outbreak Associated with a Daycare Facility, Hendry County, August 2010
On August 3, 2010 the Hendry County Health Department (HCHD) received an electronic laboratory report positive for *Shigella sonnei* in a child aged five years. The HCHD epidemiology program launched an investigation that revealed the patient attended a local daycare center during the week prior to illness and had been sent home on July 24 with diarrhea and abdominal pain. This information prompted a visit to the daycare facility to make an assessment, educate, and implement appropriate control measures.

The facility's investigation led to the identification of five (16%) students and one (17%) staff member in two separate classrooms who were symptomatic between July 23 and August 3. The director of the facility had sent a letter to parents on July 26 informing them of a circulating diarrheal illness and advised them to "keep children home if they exhibit stomach flu-like illness." The health department had not been notified prior to the letter being sent.

On August 3, 2010 HCHD recommended implementation of Phase 1 interventions from the *Guidelines for Control of Outbreaks of Enteric Disease in Childcare Settings*, including exclusion and readmission criteria, personal and environmental control measures, and issued a letter notifying parents of *Shigella* at the day care center. The HCHD blast-faxed an advisory to community health care providers and partners. The Early Learning Coalition of Southwest Florida and the Bureau of Epidemiology were notified of the outbreak.

On August 4, 2010 the Hendry County Environmental and Epidemiology programs conducted a joint inspection of the facility. Overall, the facility was clean and the administration was cooperative.

Daily surveillance was conducted until the outbreak was contained and Phase 1 interventions were lifted on August 18. Ultimately, there were seven cases among students and staff at the facility and five cases among contacts. One person was hospitalized for severe illness and recovered.

***Shigella sonnei* Outbreak Investigation at a Local Daycare Center, Osceola County, July-August 2010**
On Monday August 16, 2010 the Osceola County Health Department (OCHD) was notified of two confirmed *Shigella sonnei* cases in children. The first confirmed case was in a boy aged six years who had onset of symptoms on August 11 and experienced abdominal pain, diarrhea, and vomiting. A local urgent care facility

diagnosed otitis media. However, as symptoms persisted the child was taken to the emergency room and admitted for appendicitis. Later, stool culture confirmed *Shigella sonnei*. Interviewing the parent revealed the child attended daycare and two other household members were also symptomatic. One of the symptomatic contacts was a boy aged three years who attends the same daycare. His symptom onset was August 8.

The second confirmed case was in a boy aged one year who had onset of symptoms on August 7 and experienced low grade fever, diarrhea, and vomiting. The child also attends the same daycare center. One of this boy's siblings, a boy aged six years, was also symptomatic starting on August 16. The mother was interviewed and confirmed onset dates, and the last day of attendance at the daycare center was August 16. She also reported her neighbor's daughter who also attends the same daycare center had been symptomatic. Upon interviewing the neighbor, it was found that three children in that home (aged two, three, and four years) had been symptomatic, and all three attend the same daycare center. Their symptom onsets were from July 29 through August 1. Reported symptoms of gastrointestinal illness included diarrhea (100%), abdominal pain (43%), vomiting (71%), and fever (57%).

An environmental investigation was performed on August 18. The daycare center's kitchen, restrooms, sinks, and all classrooms were inspected. Recommendations were offered, including implementation of Phase 1 interventions from *Guidelines for Control of Outbreaks of Enteric Disease in Childcare Settings*; issuing a letter notifying parents of Shigella at the daycare center, ongoing investigation, and contact tracing.

Staphylococcus aureus

Three *Staphylococcus aureus* Deaths, Palm Beach County, September-October 2010

The Palm Beach County Health Department (PBCHD) Division of Epidemiology and Disease Control investigated three unrelated cases of community-associated *Staphylococcus aureus* mortality that occurred within a two-month period from September to October, 2010. Only one of the three was a methicillin-resistant (MRSA) infection.

The first case was reported to PBCHD on September 1, from a hospital in the central part of the county. The case was a woman aged 55 years who became ill on August 19. She was seen at a local emergency department for back pain, diagnosed with sciatic nerve pain, and discharged with pain medication. She was admitted to a different hospital on August 29 in respiratory failure and septic shock. A chest x-ray revealed bilateral infiltrates. Blood and urine cultures were positive for *Staphylococcus aureus*. Resistance testing demonstrated resistance to oxacillin and penicillin confirming this was a MRSA infection. Specimens sent to the Bureau of Laboratories confirmed the hospital laboratory results. No viral tests were conducted and the patient died August 30.

The second case reported was in a woman aged 82 years. This case was reported by a hospital in the southern part of the county on October 29. The patient became ill on August 15 and was treated for a urinary tract infection. She was admitted to the hospital on August 29, after being found unresponsive that morning. Blood specimens obtained that same day were positive for *Staphylococcus aureus* which was resistant to penicillin and sensitive to oxacillin. A urine culture was positive for *Klebsiella pneumoniae*. No viral testing was conducted. The patient was admitted to a hospice unit on September 2, and died on September 5. No specimens were available for confirmatory testing at the Bureau of Laboratories.

The third case was in a girl aged 15 years living in the northern part of the county. This case was reported to PBCHD on November 2. She had onset of fever, vomiting, headaches, and upper respiratory infection symptoms on October 19. She was found the morning of the 22 with seizures and admitted to a local hospital. A respiratory specimen collected October 23 from her endotracheal tube was positive for Beta-hemolytic

Streptococcus group F and *Staphylococcus aureus*. The *Staphylococcus aureus* isolate was sensitive to all antibiotics tested. She died October 30. Testing did confirm the presence of *Staphylococcus aureus* in the respiratory specimen.

Family interviews revealed that none of these patients had a history of known *Staphylococcus* colonization or skin infection in the past. None of the cases had a history of activities with a high risk of impairment of skin integrity.

Streptococcal Disease

Strep Throat and Scarlet Fever in a Child Care Facility, Hillsborough County, May 2010
On May 25, 2010 the Hillsborough County Health Department (HCHD) was notified of an outbreak of streptococcal throat infections ("strep throat") in a childcare facility. Four children, aged three to five years, were reported by the facility to have strep throat. One child was diagnosed by a physician with a positive rapid strep test. Another child had a diagnosis of strep throat and "scarlatina" (scarlet fever).

Initially, information on strep throat, scarlet fever, and basic sanitation recommendations for childcare were provided to the facility. In addition, a letter was sent to the parents and a door sign was posted at the center. The childcare facility was advised to discontinue family style dining for the duration of the outbreak. As of June 6, no new cases had been reported and the investigation was considered complete.

On June 24th, one month after the initial report, HCHD was notified of new cases of strep throat at the same facility. One child was diagnosed with strep throat and had a rash. Two other children had sore throats. Because of the new cases, HCDH sent epidemiologists to conduct a site visit on June 29, 2010.

Observations from this visit noted that door signs and parent letters were visible. The center was using bleach to clean. Water tables and sand tables were available and in use. Play dough was in use. Children's toothbrushes were kept by the hand washing sink. HCHD recommended frequent hand washing. HCHD also recommended surveillance for new cases of strep throat and the prompt removal of ill children. Children who had strep throat would only be readmitted after 24 hours of antibiotic therapy. Family-style dining was suspended until two incubation periods (eight days) after the last case of strep throat. Toys and high touch items were cleaned with a bleach solution and the use of water tables, sand tables, and toys that could not be sanitized were discontinued. In addition, careful consideration was given to the use of toothbrushes at the facility. Given the high number of cases and the long duration of the outbreak, it was recommended to throw away all toothbrushes in the affected classrooms, disinfect the toothbrush holder, and reissue new toothbrushes to all children. HCDH recommended toothbrushes belonging to children with sore throats be thrown away immediately and a new one issued when the child returns.

There were nine cases with a diagnosis of strep throat and five cases with sore throat or rash, which were considered suspect cases. The first onset date was May 23, 2010 and the last case's onset date was July 7, 2010. The attack rate was 20% (14 of 70) in the children and 0% (0 of 10) in the staff. Prior to this investigation, HCHD was not aware of the use of toothbrushes in childcare facilities or the need to address this practice. After the enhanced recommendations were provided, only one additional case of sore throat was reported.

Tuberculosis

Tuberculosis Cluster at a Homeless Shelter and Day Center, Duval County, 2010-2011
The Duval County Health Department (DCHD) Tuberculosis (TB) program is currently managing a cluster of

several individuals with ties to a local homeless shelter who were confirmed with *Mycobacterium tuberculosis* disease. In a retrospective review, the initial person in the cluster was a man aged 54 years diagnosed on August 28, 2010. On September 10, 2010, a man aged 51 years had a positive culture for *M. tuberculosis*. A third individual was a man aged 50 years (later determined to be from the same shelter) who was hospitalized and had a positive culture on October 28, 2010 for *M. tuberculosis*.

As of February 11, 2011 there were nine confirmed cases with a genotyping and/or epidemiological connection to the shelter. Because of the evidence of possible on-going transmission, an active case-finding event was held on February 22-23. The main objectives of the case-finding event were to detect active cases of TB and identify individuals with latent TB infection (LTBI). During the event, the Bureau of Tuberculosis and Refugee Health first used the GeneXpert machine, which is a fully contained nucleic acid detection system. A portable x-ray machine was also available onsite to optimize use of the TB teleradiology system, as well as latent TB infection testing by Inteferon Gamma Release Assay (IGRA).

There were a total of 212 individuals screened for TB at the shelter during the active event. One active case of TB was detected. The evaluation of the additional TB suspects and individuals with LTBI is currently on-going. The Bureau of Tuberculosis and Refugee Health is working with DCHD to implement a long-range action plan to address this issue in the community.

Tuberculosis in an Elephant, Seminole County, August 2010

On August 26, 2010 the Seminole County Health Department (SCHD) was notified of a positive *Mycobacterium tuberculosis* culture obtained from lung tissue as part of a necropsy conducted on an elephant that died on July 29, 2010. The report originated from the local U.S. Department of Agriculture Animal and Plant Health Inspection Service representative, who contacted the Bureau of Environmental Public Health Medicine, and was ultimately received at SCHD by both the Tuberculosis and Refugee Health Program and the Epidemiology Program. Although the animal died while in a zoo in Massachusetts, it was also exhibited at a flea market in Seminole County from November 17, 2009 to March 31, 2010, as well as during previous winters for the past several years.

The elephant's three local handlers had been tested annually for tuberculosis by the SCHD TB program since 2003, and the results were consistently negative, including the last test performed on February 23, 2010. The animal's Florida veterinarian was tested on September 8 and that result was also negative. State health departments in Massachusetts and Maryland followed up with the elephant's handlers who had moved to those states in the interim. Because the highest risk group, the handlers and veterinarian, was negative for TB, the risk for others was deemed minimal and no additional contact tracing was required.

Typhoid Fever

Typhoid Fever Imported from Haiti in a Food Handler, Miami-Dade County, April 2010

The Miami-Dade County Health Department (MDCHD), Epidemiology, Disease Control and Immunization Services (EDC-IS) investigated a typhoid fever case in a man aged 35 years. The man was seen at a local hospital emergency department on April 27, 2010 with fever and headache, which began on April 22. He was discharged on April 28, and instructed to follow-up at a local medical center within 7-10 days.

Initially, the patient could not be contacted. According to the hospital emergency department notes, the patient is a possible food handler with recent travel to Haiti. Additional resources were used to gather patient demographics and place of employment. Those searches indicated the man was a kitchen supervisor at a local restaurant. Staff at the restaurant reported the man did work there but his last day of work, as well as his future date of return was not known at that time.

The infection was acquired in Haiti. Great efforts were required to locate the man to assure he completed the antibiotic treatment. In total, 69 employees of the restaurant were tested with three stool cultures each. An additional four household contacts were also tested. All results were negative for *Salmonella Typhi.*

Typhoid Fever in a Return Traveler from India, Hillsborough County, June 2010
On June 6, 2010 the Hillsborough County Health Department (HCHD) was notified of a possible typhoid fever case in a man aged 31 years. HCHD interviewed the hospitalized patient on June 7, 2010.

The patient traveled to India on May 14 and stayed with family until returning home on May 31. On June 3, he developed fever, chills, watery diarrhea, and body pain. Later that day he visited an urgent care clinic where he was diagnosed with a sinus infection, prescribed Ciprofloxacin, and sent home. When symptoms continued the next day, he went to the emergency department, where blood and stool samples were collected. He was sent home. On June 5 symptoms worsened; he returned to the emergency department and was admitted. Previously collected blood cultures were positive for Gram negative rods identified as *Salmonella* Typhi. These samples were forwarded to the Bureau of Laboratories - Jacksonville where *S*. Typhi Group D1 was confirmed. The stool samples were negative. He remained hospitalized from June 5-11 with ongoing high fever and diarrhea. On June 25, the man tested negative for *S*. Typhi in blood and stool cultures. The patient recovered fully.

The patient had not been vaccinated for typhoid fever prior to travel. While in India, he reported eating local foods and drinking untreated water. He did not recall any contact with sick people. The patient did not attend work or have any contact with anyone in sensitive situations. He did not go outside the home while ill for any purpose other than to seek medical attention. The patient's wife and child aged two years did not travel to India and were not in sensitive situations. The wife was six months pregnant at the time of interview and was advised to follow up with her physician. No family member or contacts became ill. The family was provided information and educated on prevention and transmission.

West Nile Virus

West Nile Virus in an Asymptomatic Blood Donor, Osceola County, July 2010
On July 29, 2010 the Osceola County Health Department (OCHD) Epidemiology Program received a positive laboratory result for West Nile Virus (WNV) from Florida's Blood Bank Center for a man aged 46 years. The sample was collected on July 15 from a bloodmobile at a resort in Osceola County. When the donor was interviewed, it was found he works cleaning the pool at a local hotel. During his work, he is exposed to mosquitoes. He does not use chemical repellants or other protection from mosquitoes. He recalled a large number of mosquitoes being active in and around the pool area. The patient reported no travel history during the past two months. The man was asymptomatic so the case does not meet case criteria to be reported in Merlin.

Osceola County had a positive WNV result in a horse the previous week and Orange County had several sentinel chicken flocks that tested positive for WNV. A Health Advisory was issued to remind the public that mosquito activity is ongoing.

Neuroinvasive West Nile Cases, Orange County, August 2010
On August 5, 2010 Orange County Health Department (OCHD) received a positive West Nile Virus (WNV) IgM laboratary result from a local hospital on a male Orange County resident aged 40 years. Orange County Mosquito Control was contacted on August 6 for mosquito management. The man had no significant medical history and was a smoker and recreational drug user. According to the man's wife, he did not travel out of Florida during the incubation period of 2 to 14 days. The man did have some outdoor exposure in Orlando and St. Cloud.

Osceola County Health Department was notified of the St. Cloud address on August 13. The man's wife stated he did not recall any mosquito bites.

The man had developed non-specific symptoms on July 22 including malaise, wheezing, and congestion. On July 23, the man complained of body and muscle aches. The following day he developed a high fever (103°F) with rigors, stiff neck, and severe headache. He also became disoriented, lethargic, and had severe weakness. On July 25, the man's mental status altered and he became aphasic, or unable to speak. His fever reached 105°F. He developed some facial droop, and bladder/bowel incontinence with lower extremity paralysis. The patient was admitted to the local hospital intensive care unit (ICU) on July 26 and was initially diagnosed with meningitis. Later, he was diagnosed with sepsis. Encephalitis and stroke were ruled out. After the positive WNV IgM result, the man was diagnosed with WNV encephalitis. On August 20, WNV was confirmed by a positive IgM in cerebrospinal fluid (CSF) by the Bureau of Laboratories - Tampa. On August 23 OCHD issued a Mosquito-borne Illness Advisory to the public. The patient spent several months recovering at a rehabilitation facility. He had significant speech and vision deficits. He also suffered from lower extremity nerve damage causing difficulties with mobility.

On September 1, 2010 OCHD received a second positive West Nile Virus (WNV) IgM laboratary result from a local hospital, on a male resident of Orange County aged 80 years. Orange County Mosquito Control was contacted on September 1 for mosquito management. The patient had an extensive medical history including coronary artery disease with coronary artery bypass graft, cancer, diabetes, hypertension, and chronic obstructive pulmonary disease (COPD). In spite of the medical history, the man seemed to be in good health prior to this illness. According to the man's wife, he did not travel out of Orange County during the incubation period. The man spent time outdoors daily, and the wife could not recall him having any mosquito bites.

The man developed symptoms around the second week of August (illness onset approximated as August 8). He had high fever, chills, body aches, sweats, headache, and malaise. The man's symptoms worsened prior to hospital admission with progressive weakness, lethargy, difficulty walking, nausea, and anorexia. He was admitted to the ICU at a local hospital on August 22. On August 23, the man's mental status became altered and he was unable to speak or move. The man was initially diagnosed with possible pneumonia due to a cough, but the chest x-ray did not support this diagnosis. Additionally, this symptom may have been a normal finding due to the patient's history of COPD. After the positive WNV IgM was received, the man was diagnosed with WNV encephalitis. The patient died on September 4 at the local hospital. On September 7, WNV was confirmed by a positive IgM in CSF by the BOL - Tampa. On September 7, OCHD issued a Mosquito-borne Illness alert to the public.

Section 6

Recently Published Papers & Reports

Azarian T, Zaheer Saad. “Mitigating the H1N1 Pandemic: A Year in Review.” *Northeast Florida Medicine* 2010; Vol. 61; No. 3

Basile AJ, Biggerstaff BJ, Kosoy OL, Junna SR, Panella NA, Powers AM, **Stark LM**, Nemeth NM. “Removal of Species Constraints in Antibody Detection.” *Clinical Vaccine Immunology* 2010 Jan;17(1):56-61.

Byrne MM, Davila EP, Zhao W, Parker D, Hooper MW, Caban-Martinez A, Dietz N, **Huang Y**, Messiah A, Lee DJ. “Cancer Screening Behaviors Among Smokers and Non-smokers.” *The International Journal of Cancer Epidemiology, Detection, and Prevention 34* (2010) 611-617.

Caban-Martinez AJ, Davila EP, Zhao W, Arheart K, Hooper MW, Byrne M, Messiah A, Dietz N, **Huang Y**, Fleming LE, Lee DJ. “Disparities in Hypertension Control Advice According to Smoking Status.” *Preventive Medicine,* 51 (2010) 302-306.

Dai J, Chen Y, **Dean S**, Morris JG, **Salfinger M**, Johnson JA. “Multiple-genome Comparison Reveals New Loci for Mycobacterium Species Identification.” *Journal of Clinical Microbiology* 2011 Jan; 49(1):144-53. Epub 2010 Nov 3.

Dietz NA, Westphal L, Arheart KL, Lee DJ, **Huang Y**, Sly DF, et al. “Changes in Youth Cigarette Use Following the Dismantling of an Antitobacco Media Campaign in Florida.” *Preventing Chronic Disease* 2010; 7(3).

Doyle TJ, Hopkins RS, Transmission Investigation Team: **Ball L, Dopico A, Harder T, Harper T, King D, Mann P, Morgan A, Ragan P, Rivers S, Scoggins K, Wansbrough L**. “Low Secondary Transmission of 2009 Pandemic Influenza A (H1N1) in Households Following an Outbreak at a Summer Camp: Relationship to Timing of Exposure.” *Epidemiology and Infection 2010*; 01:1-7.

Doyle TJ, King D, Cobb J, Miller D, Johnson B. “An Outbreak of Epidemic Keratoconjunctivitis at an Outpatient Ophthalmology Clinic.” *Infectious Disease Reports* 2010; Vol. 2: e17.

Doyle TJ, Mejia-Echeverry A, Fiorella P, Leguen F, Livengood J, Kay R, Hopkins RS. “Cluster of Serogroup W135 Meningococci, Southeastern Florida, 2008-2009.” *Emerging Infectious Disease* 2010 Jan; 16(1):113-5.

Harper T, **Mulay P**. “Pesticide Poisoning of Hospital Employees Associated with Attempted Suicide.” *Epi Update* 2010 Oct.

Hoffner SE, **Salfinger M**. “Ad fontes!” *The International Journal of Tuberculosis and Lung Disease* 2010 Mar; 14(3):260.

Jenkins PH, **Montejano HJ**, Abbasi MJ, Crowley MS, O’Brien MG, Conte V, Etienne M, Rico E, Rea DG, Baker RM, Burden EA, Gillis LD, **Hamilton JJ, Hopkins RS, Kite-Powell AC**, Merlo E. “Update on Cholera — Haiti, Dominican Republic, and Florida, 2010.” *Morbidity and Mortality Weekly Report*, December 24, 2010: Vol. 59; No. 50, 1639.

Johnson TM, **Murray MR, Huang Y**. “Associations Between Self-Management Education and Comprehensive Diabetes Clinical Care.” *Diabetes Spectrum* 2010; Vol. 23; 1.

King DS, Luna VA, Cannons AC, **Amuso PT**. “Procurement of Spore-free Bacillus Anthracis for Molecular Typing Outside of BSL3 Environment.” *Journal of Applied Microbiology* 2010 May; 108(5):1817-27.

Lee SJ, **Mulay P**, Diebolt-Brown B, Lackovic M, Mehler L, Beckman J, Waltz J, Prado JB, Mitchell Y, Higgins SA, Schwartz A, Calvert GM. “ Acute Illnesses Associated with Exposure to Fipronil — Surveillance Data from 11 States in the United States, 2001–2007.” *Clinical Toxicology* 2010; 48:737-44.

Park S, Sappenfield WM, HUANG Y, Sherry B, Bensyl DM. “The Impact of the Availability of School Vending Machines on Eating Behavior During Lunch: The Youth Physical Activity and Nutrition Survey.” *Journal of the American Dietetic Association* 2010; 110: 1532-1536.

Patel P, Mackellar D, Simmons P, Uniyal A, Gallagher K, **Bennett B**, Sullivan TJ, Kowalski A, Parker MM, LaLota M, Kerndt P, Sullivan PS; Centers for Disease Control and Prevention Acute HIV Infection Study Group. “Detecting Acute Human Immunodeficiency Virus Infection Using 3 Different Screening Immunoassays and Nucleic Acid Amplification Testing for Human Immunodeficiency Virus RNA, 2006-2008.” *Archives of Internal Medicine* 2010 Jan 11;170(1):66-74.

Pounder JI, Anderson CM, Voelkerding KV, **Salfinger M,** Dormandy J, Somoskovi A, Heifets L, Graham JJ, Storts DR, Petti CA. “Mycobacterium Tuberculosis Complex Differentiation by Genomic Deletion Patterns with Multiplex Polymerase Chain Reaction and Melting Analysis.” *Diagnostic Microbiology and Infectious Disease* 2010 May;67(1):101-5. Epub 2010 Mar 12.

Schulte JM, Kay R, Hamilton JJ, Mellinger C, Yambor P, **Luce C**, Ginzi D, **Gill, J, Hopkins RS**. “Pertussis in Florida, 2000 – 2006: Trends in a Historically Low-Incidence State.” *Public Health Reports* 2010 Sep-Oct; Vol. 125.

Siston AM, Rasmussen SA, Honein MA, Fry AM, Seib K, Callaghan WM, Louie J, **Doyle TJ**, Crockett M, Lynfield R, Moore Z, Wiedeman C, Anand M, Tabony L, Nielsen CF, Waller K, Page S, Thompson JM, Avery C, Springs CB, Jones T, Williams JL, Newsome K, Finelli L, Jamieson DJ. “Pandemic 2009 Influenza A(H1N1) Virus Illness Among Pregnant Women in the United States.” J*ournal of the American Medical Association* April 21, 2010; Vol. 303, No. 15, pg.1517.

Skarbinski J, Jain S, Bramley A, Lee EJ, Huang J, Kirschke D, Stone A, Wedlake T, Richards SM, Page S, **Patti Ragan P**, Bullion L, Neises D, Williams RM, Petruccelli BP,Vandermeer M, Lofy KH, Gindler J, Finelli L. “Hospitalized Patients with 2009 Pandemic Influenza A (H1N1) Virus Infection in the United States—September–October 2009.” *Clinical Infectious Disease* 2010.

Sosin DM, **Hopkins RS**. “Public Health Surveillance for Preparedness and Emergency Response: Biosurveillance for Human Health.” *Principles and Practice of Public Health Surveillance Third Edition* July 2010; Chapter 14.

Stanek D, Blackmore C, Dato V, Martin B, Arguin P, Kozarsky P, Bensyl D, Selent M, **De Rochars B.** “Malaria Imported from West Africa by Flight Crews — Florida and Pennsylvania.” *Morbidity and Mortality Weekly Report* 2010; Vol. 59: No. 43, pg. 1412.

Stern EJ, Galloway R, Shadomy SV, Wannemueler K, Atrubin D, **Blackmore C**, Wofford T, Wlikins PP, Ari M, Harris L, Clark TA. “Outbreak of Leptospirosis among Adventure Race Participants in Florida, 2005.” *Clinical Infectious Diseases* 2010 Mar: 50.

Suarthana E, McFadden JD, Laney AS, Kreiss K, Anderson HA, Hunt DC, Neises D, **Goodin K,** Thomas A, Vandermeer M, Storey E. “Occupational Distribution of Persons With Confirmed 2009 H1N1 Influenza.” *Journal of Occupational and Environmental Medicine* 2010; Vol. 52, No. 12, pg. 1212.

Thompson ND, Barry V, **Alelis K**, Cui D, Perz JF. “Evaluation of the Potential for Bloodborne Pathogen Transmission Associated with Diabetes Care Practices in Nursing Homes and Assisted Living Facilities, Pinellas County.” *Journal of the American Geriatrics Society* 2010.

Section 7

Cancer Data
2008

Cancer incidence data are collected, verified, and maintained by the Florida Cancer Data System (FCDS), Florida's statewide cancer registry. The FCDS is administered by the Florida Department of Health Bureau of Epidemiology and operated by the Sylvester Comprehensive Cancer Center at the University of Miami, Leonard M. Miller School of Medicine.

The FCDS began operation with a pilot project for cancer registration in 1980 and commenced statewide collection of cancer incidence data from all Florida hospitals in 1981. The FCDS now collects incidence data from hospitals, freestanding ambulatory surgical centers, radiation therapy facilities, pathology laboratories, and private physician offices. Each facility, laboratory, and practitioner is required to report the FCDS within six months of each diagnosis and within six months of the date of each treatment. Consequently, there is an inherent time lag in the release of cancer registry data for surveillance activities.

During 2008, physicians diagnosed 105,207 primary cancers among Floridians, an average of 288 cases per day. Cancer occurs predominantly among older people as age is the top risk factor for developing disease. Approximately 59% of the newly diagnosed cancers in 2008 occurred in persons aged 65 years and older; this age group accounts for 18% of Florida's population. The four most common cancers in Floridians were lung and bronchus (16,339 cases), prostate (14,391 cases), female breast (13,749 cases), and colorectal (10,199 cases), which accounted for 52% of all new cases in Florida. Fifty-three percent of new cancers were diagnosed in males. The number of new cancer cases in Florida's five most populous counties (Broward, Miami-Dade, Hillsborough, Palm Beach, and Pinellas) accounted for 39% of the new cancer cases in Florida.

Over the 28-year period from 1981 to 2008, males had a higher incidence (age-adjusted incidence rate) than females. Among blacks, the incidence among males was between 55% and 102% higher than that among females, depending on the cancer site of comparison. Among whites, the incidence among males was between 28% and 53% higher than that among females. White females had higher age-adjusted incidence rates than black females in all 28 years. The racial disparity varied between 10% and 27%. Black males had higher age-adjusted incidence rates than white males in all years, except in 1987, 1988, and 2006. The racial disparity between black and white males increased from 1989 until 1995; however, this has steadily declined since 1996.

More information about the burden of cancer in Florida is provided in the Florida Annual Cancer Report, an epidemiological series, available on the department's website at: www.doh.state.fl.us/disease_ctrl/epi/cancer/CancerIndex.htm, or the FCDS website at: www.fcds.med.miami.edu.

Table 1. Number of New Cancer Cases by Sex and Race, Florida, 2008

	All Cancers	Lung & Bronchus	Prostate	Breast	Colorectal	Bladder	Head & Neck	Non-Hodgkin(1)	Melanoma	Ovary	Cervix
Florida[2]	105,207	16,339	14,391	13,749	10,199	4,817	4,162	4,125	4,002	1,498	907
Female	49,456	7,504	-	13,749	4,891	1,126	1,106	1,871	1,494	1,498	907
Male	55,634	8,812	14,391	-	5,283	3,690	3,051	2,249	2,507	-	-
Black	10,158	1,174	2,032	1,429	1,134	200	332	354	-	116	161
White	91,928	14,855	11,933	11,844	8,757	4,513	3,713	3,629	4,002	1,325	709
Black Female	4,730	411	-	1,429	573	63	88	165	-	116	161
White Female	43,157	6,949	-	11,844	4,169	1,037	996	1,641	1,494	1,325	709
Black Male	5,421	763	2,032	-	4559	137	244	189	-	-	-
White Male	48,666	7,885	11,933	-	4,566	3,475	2,712	1,983	2,507	-	-

Source of data: Florida Cancer Data System
1 Non-Hodgkin refers to Non-Hodgkin's lymphoma throughout this report.
2 Florida incidence totals throughout this report include 1,693 new cancers in persons of "Other" races, 1,494 cases with unknown race, 117 cases with unknown or unspecified sex, and 3 cases with unknown age. Totals by sex include cases with unknown or Other race and unknown age. Totals by race include cases with unknown sex and unknown age.

Table 2. Number of New Cancer Cases by County, Florida, 2008

	All Cancers	Lung & Bronchus	Prostate	Breast	Colorectal	Bladder	Head & Neck	Non-Hodgkin	Melanoma	Ovary	Cervix
Florida	105,207	16,339	14,391	13,749	10,199	4,817	4,162	4,125	4,002	1,498	907
Alachua	1,054	172	161	155	97	44	52	45	24	12	^
Baker	110	23	11	12	^	^	^	^	^	^	^
Bay	998	181	177	95	94	48	42	40	31	13	^
Bradford	150	27	22	19	21	^	^	^	^	^	^
Brevard	3,877	663	466	493	346	203	179	168	127	48	28
Broward	8,967	1,225	1,187	1,232	930	391	366	383	324	111	107
Calhoun	57	15	11	^	^	^	^	^	^	^	^
Charlotte	1,372	246	234	165	110	84	67	51	72	14	^
Citrus	1,294	218	208	150	110	96	54	46	53	25	^
Clay	887	162	127	102	67	49	33	41	26	10	^
Collier	2,093	250	442	237	174	111	79	76	108	32	14
Columbia	396	91	37	47	36	16	20	11	16	^	^
Miami-Dade	11,287	1,312	1,649	1,479	1,294	424	427	496	214	173	124
DeSoto	184	32	32	25	13	^	^	10	^	^	^
Dixie	86	25	10	^	^	^	^	^	^	^	^
Duval	4,252	690	630	565	390	160	176	149	140	50	42
Escambia	1,553	281	193	233	142	67	65	59	53	22	11
Flagler	674	117	67	76	61	30	25	37	38	10	12
Franklin	66	15	^	^	^	^	^	^	^	^	^
Gadsden	212	26	39	30	27	^	^	^	^	^	^
Gilchrist	92	22	14	11	^	^	^	^	^	^	^
Glades	65	12	10	10	^	^	^	^	^	^	^
Gulf	92	20	18	10	^	^	^	^	^	^	^
Hamilton	69	^	10	^	^	^	^	^	^	^	^
Hardee	123	23	14	^	15	^	^	^	^	^	^

Source of data: Florida Cancer Data System
^ Statistics for cells with fewer than 10 cases are not displayed.

Table 2. (Continued) Number of New Cancer Cases by County, Florida, 2008

	All Cancers	Lung & Bronchus	Prostate	Breast	Colorectal	Bladder	Head & Neck	Non-Hodgkin	Melanoma	Ovary	Cervix
Hendry	140	24	15	15	13	^	11	^	^	^	^
Hernando	1,333	266	168	140	136	57	52	53	48	26	^
Highlands	799	157	68	77	83	34	31	29	47	^	^
Hillsborough	5,883	808	804	813	575	228	244	228	200	98	65
Holmes	92	19	^	10	15	^	^	^	^	^	^
Indian River	1,084	172	131	130	101	67	51	35	77	12	^
Jackson	264	53	22	32	28	11	21	^	^	^	^
Jefferson	87	13	13	^	^	^	^	^	^	^	^
Lafayette	26	^	^	^	^	^	^	^	^	^	^
Lake	2,392	420	390	282	231	105	86	89	116	44	12
Lee	3,720	558	595	451	312	155	154	132	175	61	27
Leon	920	125	142	192	75	16	32	27	27	15	^
Levy	260	55	29	31	26	15	10	14	^	^	^
Liberty	28	^	^	^	^	^	^	^	^	^	^
Madison	111	22	17	12	11	^	^	^	^	^	^
Manatee	1,966	322	256	269	189	118	68	67	83	37	15
Marion	2,461	479	342	286	235	130	77	88	87	29	26
Martin	1,101	190	186	128	109	68	47	30	53	15	^
Monroe	397	64	43	49	40	16	23	^	24	^	^
Nassau	470	72	70	76	44	15	16	18	15	^	^
Okaloosa	950	135	104	140	92	63	38	37	47	15	^
Okeechobee	224	44	24	26	20	15	14	^	^	^	^
Orange	4,602	649	600	639	461	166	167	184	153	68	55
Osceola	1,046	134	145	139	117	42	38	34	31	18	11
Palm Beach	8,481	1,188	1,083	1,170	781	474	283	378	405	115	54
Pasco	3,032	530	413	356	296	168	103	104	141	46	19

Source of data: Florida Cancer Data System
^ Statistics for cells with fewer than 10 cases are not displayed.

Table 2. (Continued) Number of New Cancer Cases by County, Florida, 2008

	All Cancers	Lung & Bronchus	Prostate	Breast	Colorectal	Bladder	Head & Neck	Non-Hodgkin	Melanoma	Ovary	Cervix
Pinellas	6,017	993	637	849	597	329	277	198	247	99	44
Polk	3,841	630	526	408	415	162	140	155	187	35	35
Putnam	489	86	71	53	61	27	26	21	16	^	^
Saint Johns	989	160	161	146	84	40	40	32	46	16	10
Saint Lucie	1,584	298	189	198	144	89	43	60	62	29	11
Santa Rosa	755	131	103	128	59	27	34	26	28	^	^
Sarasota	3,145	512	472	433	257	153	118	143	143	50	23
Seminole	1,690	236	220	261	143	64	51	68	65	24	13
Sumter	855	138	173	106	69	40	31	32	34	14	^
Suwannee	234	52	18	33	18	^	^	13	^	^	^
Taylor	98	18	10	12	^	^	^	^	^	^	^
Union	194	39	24	^	23	^	20	^	^	^	^
Volusia	2,962	581	263	398	304	110	121	120	121	41	27
Wakulla	135	33	26	12	10	^	^	^	^	^	^
Walton	243	41	37	36	18	13	12	^	^	^	^
Washington	97	25	10	^	^	^	^	^	^	^	^

Source of data: Florida Cancer Data System
^ Statistics for cells with fewer than 10 cases are not displayed.

Table 3. Age-Adjusted Incidence Rates[1] by Sex and Race, Florida, 2008

	All Cancers			Lung & Bronchus			Prostate			Breast			Colorectal			Bladder		
	Rate	CI[2]		Rate	CI		Rate	CI		Rate	CI		Rate	CI		Rate	CI	
Florida[3]	437.5	434.8	440.2	64.8	63.8	65.8	124.9	122.9	127.0	111.9	109.9	113.8	41.3	40.5	42.1	18.8	18.2	19.3
Female	388.2	384.7	391.8	54.2	53.0	55.5	-	-	-	111.9	109.9	113.8	35.6	34.5	36.6	7.8	7.4	8.3
Male	503.1	498.9	507.4	78.0	76.4	79.7	124.9	122.9	127.0	-	-	-	48.0	46.7	49.3	33.1	32.1	34.2
Black	436.5	427.7	445.4	54.1	51.0	57.5	208.5	199.0	218.4	103.4	98.0	109.1	50.6	47.6	53.8	10.1	8.7	11.6
White	432.7	429.8	435.6	65.6	64.6	66.7	114.9	112.8	117.0	111.1	109.0	113.2	39.6	38.7	40.5	19.5	18.9	20.1
Black Female	354.4	344.1	364.9	33.3	30.0	36.7	-	-	-	103.4	98.0	109.1	44.4	40.7	48.3	5.4	4.1	6.9
White Female	388.1	384.2	392.0	56.5	55.1	57.9	-	-	-	111.1	109.0	113.2	33.9	32.8	35.0	8.0	7.5	8.6
Black Male	555.9	540.1	572.1	83.9	77.7	90.7	208.5	199.0	218.4	-	-	-	59.7	54.4	65.4	17.2	14.2	20.6
White Male	492.2	487.7	496.6	77.1	75.4	78.8	114.9	112.8	117.0	-	-	-	46.1	44.8	47.5	34.2	33.1	35.4

Source of data: Florida Cancer Data System
1 Rates are expressed as number of cases per 100,000 population per year, adjusted to the 2000 U.S. standard population.
2 95% confidence interval.
3 Florida incidence rates throughout this report include 1,693 new cancers in persons of "Other" races, 1,428 cases with unknown race and 117 cases with unknown or unspecified sex. Rates calculated by sex include cases with unknown or other race. Rates by race include cases with unknown sex. By definition, age-adjusted incidence rates cannot include the 3 cases with unknown age.

Table 3. (Continued) Age-Adjusted Incidence Rates[1] by Sex and Race, Florida, 2008

	Head & Neck			Non-Hodgkin			Melanoma			Ovary			Cervix		
	Rate	CI[2]		Rate	CI		Rate	CI		Rate	CI		Rate	CI	
Florida[3]	17.5	16.9	18.0	17.5	17.0	18.1	20.0	19.4	20.7	11.9	11.3	12.6	9.2	8.6	9.8
Female	8.6	8.1	9.2	14.4	13.8	15.1	15.2	14.4	16.1	11.9	11.3	12.6	9.2	8.6	9.8
Male	27.6	26.7	28.7	21.2	20.3	22.1	26.3	25.2	27.3	-	-	-	-	-	-
Black	13.3	11.9	14.9	14.6	13.1	16.3	-	-	-	8.8	7.2	10.6	11.3	9.6	13.3
White	17.8	17.2	18.4	17.3	16.8	17.9	20.0	19.4	20.7	12.2	11.5	12.9	8.9	8.2	9.6
Black Female	6.3	5.0	7.8	12.1	10.3	14.1	-	-	-	8.8	7.2	10.6	11.3	9.6	13.3
White Female	8.8	8.3	9.4	14.2	13.5	15.0	15.2	14.4	16.1	12.2	11.5	12.9	8.9	8.2	9.6
Black Male	22.7	19.8	26.1	18.2	15.5	21.4	-	-	-	-	-	-	-	-	-
White Male	27.9	26.9	29.0	21.0	20.0	21.9	26.3	25.2	27.3	-	-	-	-	-	-

Source of data: Florida Cancer Data System
1 Rates are expressed as number of cases per 100,000 population per year, adjusted to the 2000 U.S. standard population.
2 95% confidence interval.
3 Florida incidence rates throughout this report include 1,502 new cancers in persons of "Other" races, 1,697 cases with unknown race and 90 cases with unknown or unspecified sex. Rates calculated by sex include cases with unknown or other race. Rates by race include cases with unknown sex and age.

Table 4. Age-Adjusted Incidence Rates[1] by County, Florida, 2008

	All Cancers			Lung & Bronchus			Prostate			Breast			Colorectal		
	Rate	CI[2]		Rate	CI		Rate	CI		Rate	CI		Rate	CI	
Florida	437.5	434.8	440.2	64.8	63.8	65.8	124.9	122.9	127.0	111.9	109.9	113.8	41.3	40.5	42.1
Alachua	497.8	467.8	529.3	83.0	70.9	96.6	167.4	142.1	196.4	136.2	115.3	160.0	47.0	38.0	57.6
Baker	467.9	383.3	567.9	91.7	57.8	141.3	91.7	45.0	192.7	94.2	48.4	170.2	^	^	^
Bay	528.6	495.9	563.1	94.2	80.9	109.5	195.7	167.3	228.6	94.8	76.5	117.1	49.7	40.1	61.3
Bradford	461.0	389.6	543.9	81.3	53.5	121.4	139.1	86.9	216.0	114.1	67.9	191.3	62.5	38.6	98.8
Brevard	514.4	497.9	531.5	83.4	77.1	90.2	125.6	114.4	138.0	127.9	116.4	140.5	43.9	39.4	49.0
Broward	393.6	385.4	402.0	51.9	49.0	55.0	112.4	106.1	119.1	103.5	97.7	109.7	39.8	37.2	42.5
Calhoun	344.9	260.6	453.6	90.0	50.3	156.1	139.6	69.5	264.1	^	^	^	^	^	^
Charlotte	417.1	391.6	444.7	68.3	59.3	79.4	129.2	113.0	149.5	111.2	91.1	136.4	33.7	26.6	43.2
Citrus	468.9	439.7	500.8	70.5	61.0	82.9	140.7	121.4	165.7	119.9	97.9	148.2	34.6	28.1	44.1
Clay	500.9	467.8	535.9	93.4	79.3	109.5	143.9	119.3	172.9	104.0	84.5	127.3	39.3	30.3	50.3
Collier	371.9	354.9	389.9	40.7	35.6	46.7	150.2	136.2	165.8	91.4	78.9	106.1	29.2	24.8	34.6
Columbia	505.1	455.9	558.8	114.2	91.7	141.3	93.3	65.5	131.0	116.4	84.9	158.6	45.8	32.0	64.6
Miami-Dade	414.1	406.4	421.9	47.8	45.2	50.4	134.1	127.6	140.8	100.7	95.5	106.0	47.2	44.7	49.9
DeSoto	346.9	297.5	404.1	57.6	39.1	84.4	121.2	82.7	176.3	104.0	64.9	166.6	24.8	12.9	45.8
Dixie	368.1	291.4	464.1	100.8	64.2	157.8	74.9	35.8	155.0	^	^	^	^	^	^
Duval	514.8	499.2	530.8	86.0	79.6	92.8	173.0	159.4	187.6	124.0	113.9	134.8	47.0	42.4	52.0
Escambia	454.6	432.1	478.1	81.5	72.2	91.8	124.3	107.2	143.5	130.0	113.6	148.4	41.5	35.0	49.2
Flagler	531.1	484.6	583.3	78.6	64.1	98.9	97.0	74.3	132.0	125.2	93.3	170.2	44.8	32.7	63.4
Franklin	346.4	266.4	457.8	84.1	46.7	158.6	^	^	^	^	^	^	^	^	^
Gadsden	409.4	355.5	469.9	50.0	32.5	74.6	162.1	114.6	224.7	105.3	70.6	153.0	52.6	34.5	77.6
Gilchrist	442.5	355.4	549.5	107.1	66.8	168.9	133.9	72.6	241.0	106.4	52.2	205.6	^	^	^
Glades	387.6	294.7	509.7	71.5	36.3	139.9	106.9	50.4	229.8	96.7	46.3	219.0	^	^	^
Gulf	483.2	388.8	599.7	107.7	65.5	174.4	184.1	108.6	307.2	106.2	50.3	220.6	^	^	^
Hamilton	486.0	376.7	620.5	^	^	^	139.8	65.2	283.2	^	^	^	^	^	^
Hardee	373.1	309.4	448.0	66.1	41.8	102.1	90.5	49.4	154.5	^	^	^	44.2	24.2	76.6
Hendry	372.7	313.0	440.9	63.7	40.7	95.8	81.9	45.4	140.8	80.9	44.9	136.6	36.1	19.2	62.5
Hernando	486.8	457.1	518.8	85.9	75.1	99.0	113.4	96.4	135.2	101.0	82.1	125.1	48.4	39.6	59.7
Highlands	417.7	383.2	456.3	76.1	62.7	93.7	71.5	54.2	97.7	75.6	56.3	104.3	42.8	32.1	58.2
Hillsborough	472.5	460.4	484.9	64.3	59.9	69.0	138.5	129.0	148.7	122.5	114.2	131.4	46.5	42.8	50.6
Holmes	374.8	301.2	464.3	77.2	46.2	125.3	^	^	^	79.5	37.7	161.5	64.2	35.6	110.6
Indian River	466.6	436.5	499.1	68.1	57.8	80.9	112.1	93.4	136.0	118.3	96.3	145.8	42.4	33.6	53.9
Jackson	472.0	416.3	534.2	92.8	69.4	123.0	94.2	58.6	145.0	114.3	77.4	165.9	50.7	33.6	75.0
Jefferson	503.5	401.2	628.9	75.8	40.0	137.5	164.1	85.2	298.0	^	^	^	^	^	^
Lafayette	306.1	198.9	457.5	^	^	^	^	^	^	^	^	^	^	^	^
Lake	501.0	479.2	524.1	79.4	71.7	88.3	158.9	143.1	177.2	127.3	110.9	146.4	46.8	40.5	54.4
Lee	424.5	409.9	439.6	57.8	53.0	63.2	130.4	120.0	142.0	107.3	96.7	119.2	34.0	30.1	38.4
Leon	424.1	396.2	453.6	61.9	51.2	74.4	136.4	113.9	163.3	157.2	135.3	182.0	36.4	28.3	46.1
Levy	427.6	374.2	489.2	83.5	62.5	113.0	96.4	63.9	148.6	100.8	66.9	152.7	44.2	27.8	70.3
Liberty	405.5	266.6	600.7	^	^	^	^	^	^	^	^	^	^	^	^
Madison	514.5	422.1	623.6	102.4	64.0	158.5	164.8	95.7	269.2	99.9	50.0	189.2	53.4	26.5	99.1
Manatee	398.4	379.7	418.0	58.5	52.1	65.9	103.5	91.1	117.9	112.2	97.9	128.6	36.0	30.8	42.3
Marion	483.8	463.2	505.4	87.6	79.6	96.6	134.0	119.8	150.3	116.8	102.0	133.9	45.4	39.3	52.6
Martin	419.2	392.8	447.7	66.6	57.1	78.2	146.1	125.4	171.1	107.8	87.8	132.8	41.1	33.0	51.4
Monroe	363.6	327.3	403.9	59.2	45.2	77.5	74.0	53.0	103.9	89.3	65.4	122.2	37.2	26.2	52.7
Nassau	586.9	533.9	644.4	88.7	69.1	113.1	175.8	136.2	226.8	176.3	138.3	223.5	55.3	39.8	75.8
Okaloosa	479.9	449.7	511.8	67.4	56.5	80.0	108.6	88.5	132.8	133.6	112.2	158.2	46.3	37.3	57.0
Okeechobee	426.4	370.8	490.2	74.4	54.0	103.1	99.1	62.7	152.0	105.6	67.2	166.2	39.5	23.5	64.9
Orange	450.2	437.1	463.7	66.4	61.3	71.8	128.7	118.2	139.9	114.0	105.3	123.3	46.0	41.8	50.5
Osceola	418.8	393.4	445.5	54.4	45.5	64.8	117.5	98.9	139.3	103.1	86.4	122.5	46.6	38.4	56.2
Palm Beach	421.0	411.6	430.6	54.5	51.4	57.9	115.3	108.5	122.6	116.4	109.4	123.9	36.8	34.1	39.6
Pasco	455.3	437.4	474.2	71.4	65.1	78.6	118.6	107.2	131.7	111.9	99.0	126.6	40.1	35.3	45.7
Pinellas	406.7	396.0	417.7	62.2	58.3	66.3	90.6	83.6	98.1	112.5	104.5	121.0	38.0	34.9	41.4
Polk	507.2	490.7	524.2	78.3	72.2	84.9	141.5	129.5	154.6	109.5	98.6	121.7	52.4	47.3	58.0
Putnam	469.3	427.4	515.5	78.0	62.2	98.1	133.3	103.8	171.9	97.6	72.0	132.7	57.2	43.4	75.7
Saint Johns	455.8	427.1	486.5	70.8	60.2	83.4	152.7	129.7	179.8	132.7	111.0	158.6	38.0	30.2	48.0
Saint Lucie	476.6	452.1	502.5	81.8	72.5	92.5	110.7	95.2	129.0	121.1	103.7	141.5	41.2	34.4	49.4
Santa Rosa	474.3	440.4	510.4	81.9	68.3	97.8	133.2	108.1	164.1	152.5	126.8	182.8	35.9	27.2	46.9
Sarasota	440.9	423.5	459.1	63.3	57.6	70.0	132.9	120.8	146.7	126.1	112.5	141.6	33.4	29.0	38.8
Seminole	383.4	365.0	402.7	57.2	50.0	65.2	104.9	90.9	120.7	106.4	93.6	120.5	33.1	27.8	39.2
Sumter	566.0	524.9	611.4	87.8	72.6	107.6	224.0	190.6	266.0	155.7	122.3	200.5	44.0	33.8	59.2
Suwannee	444.3	387.0	510.0	96.9	71.7	130.9	65.0	38.3	110.6	122.5	82.2	181.9	34.5	20.1	58.6
Taylor	390.3	315.8	479.2	71.7	42.3	116.7	78.4	37.4	160.0	95.9	47.8	184.4	^	^	^
Union	1146.3	986.9	1329.7	243.4	171.2	341.9	269.3	166.1	447.3	^	^	^	134.8	84.3	211.9
Volusia	395.9	381.1	411.3	72.6	66.7	79.1	71.6	63.1	81.4	110.0	98.7	122.7	39.4	35.0	44.6
Wakulla	440.1	367.2	525.0	106.7	73.0	153.1	164.6	105.2	257.4	75.6	38.8	141.0	36.3	16.9	70.0
Walton	306.3	267.4	350.8	47.3	33.9	66.7	89.4	62.6	127.6	98.3	66.8	143.8	21.0	12.4	36.0
Washington	326.4	263.2	403.8	81.6	52.6	125.7	71.2	34.0	138.2	^	^	^	^	^	^

1 Rates are expressed as number of cases per 100,000 population per year, adjusted to the 2000 U.S. standard population.
2 95% Confidence interval.
^ Statistics for cells with fewer than 10 cases are not displayed.

Table 4 (Continued). Age-Adjusted Incidence Rates[1] by County, Florida, 2008

	Bladder			Head & Neck			Non-Hodgkin			Melanoma			Ovary			Cervix		
	Rate	CI[2]		Rate	CI		Rate	CI		Rate	CI		Rate	CI		Rate	CI	
Florida	18.8	18.2	19.3	17.5	16.9	18.0	17.5	17.0	18.1	20.0	19.4	20.7	11.9	11.3	12.6	9.2	8.6	9.8
Alachua	21.2	15.4	28.7	24.1	17.9	31.9	20.8	15.0	28.1	14.3	9.1	21.9	10.3	5.3	18.6	^	^	^
Baker	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Bay	25.5	18.7	34.2	20.8	14.9	28.6	21.3	15.2	29.6	19.3	12.9	28.2	13.1	6.9	23.7	^	^	^
Bradford	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Brevard	25.2	21.8	29.1	23.6	20.2	27.6	22.8	19.4	26.8	19.6	16.2	23.7	12.1	8.8	16.6	10.5	6.8	15.7
Broward	16.3	14.7	18.1	16.1	14.5	17.9	17.2	15.5	19.0	17.8	15.8	20.0	9.2	7.6	11.2	10.2	8.4	12.5
Calhoun	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Charlotte	21.6	17.0	28.5	22.7	16.9	31.0	15.1	10.7	22.0	25.6	18.7	35.4	12.1	5.3	25.6	^	^	^
Citrus	28.9	23.2	37.6	25.6	18.0	36.7	19.4	13.1	29.4	22.7	16.0	33.0	20.6	11.7	37.2	^	^	^
Clay	28.2	20.7	37.8	18.8	12.8	26.8	23.6	16.8	32.4	15.5	10.0	23.3	9.7	4.6	19.0	^	^	^
Collier	17.8	14.4	22.0	13.5	10.5	17.4	13.4	10.4	17.5	20.4	16.4	25.5	10.9	7.2	16.8	8.0	4.0	14.8
Columbia	19.4	11.1	32.9	25.6	15.5	40.9	14.8	7.3	27.7	24.5	13.8	41.9	^	^	^	^	^	^
Miami-Dade	15.2	13.8	16.8	15.6	14.1	17.2	18.5	16.9	20.2	9.7	8.4	11.1	11.6	10.0	13.6	9.1	7.6	10.9
DeSoto	^	^	^	^	^	^	18.4	8.6	37.6	^	^	^	^	^	^	^	^	^
Dixie	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Duval	20.6	17.5	24.1	20.6	17.7	24.0	18.4	15.5	21.7	23.0	19.3	27.3	10.9	8.1	14.5	9.7	7.0	13.2
Escambia	19.3	14.9	24.7	18.7	14.4	24.1	16.8	12.8	21.9	19.9	14.9	26.4	11.7	7.3	18.4	7.4	3.6	13.8
Flagler	20.6	13.1	35.0	17.0	10.6	30.4	35.3	22.9	54.8	32.8	21.4	52.2	15.3	5.5	42.0	34.5	14.8	71.8
Franklin	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Gadsden	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Gilchrist	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Glades	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Gulf	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Hamilton	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Hardee	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Hendry	^	^	^	28.3	14.1	51.8	^	^	^	^	^	^	^	^	^	^	^	^
Hernando	17.2	12.8	24.2	20.6	14.7	29.4	19.4	13.6	27.9	21.5	15.0	31.0	22.9	13.5	38.6	^	^	^
Highlands	13.1	9.1	22.3	16.3	10.3	27.4	16.6	9.9	28.5	25.5	17.4	39.5	^	^	^	^	^	^
Hillsborough	18.5	16.2	21.2	19.0	16.7	21.6	18.3	16.0	20.9	19.7	17.0	22.7	14.8	12.0	18.2	10.5	8.0	13.4
Holmes	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Indian River	23.5	18.2	31.4	23.6	17.2	33.0	15.1	10.2	23.0	39.7	30.1	52.6	7.6	3.9	18.2	^	^	^
Jackson	20.2	10.0	38.0	37.9	23.3	59.8	^	^	^	^	^	^	^	^	^	^	^	^
Jefferson	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Lafayette	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Lake	19.2	15.5	24.1	18.3	14.3	23.7	20.0	15.5	25.8	28.8	23.0	36.2	16.8	11.8	24.8	8.5	4.0	16.7
Lee	15.9	13.4	19.0	18.9	15.9	22.6	15.9	13.1	19.4	23.3	19.6	27.7	13.8	10.2	18.8	10.3	6.4	15.8
Leon	7.8	4.4	13.0	14.4	9.7	20.9	12.8	8.3	19.1	15.2	9.9	22.8	12.4	6.8	21.1	^	^	^
Levy	24.8	13.1	46.8	20.8	9.2	43.6	20.5	11.2	39.9	^	^	^	^	^	^	^	^	^
Liberty	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Madison	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Manatee	21.8	17.9	26.8	14.6	11.1	19.3	13.0	9.9	17.3	17.7	13.7	22.9	15.0	10.0	22.5	8.1	4.2	14.7
Marion	22.4	18.5	27.4	15.3	11.9	19.9	18.6	14.6	23.9	21.9	16.8	28.5	11.4	7.3	18.1	16.4	10.2	25.5
Martin	21.6	16.7	28.8	19.2	13.7	27.2	11.6	7.4	18.4	22.2	16.0	31.2	11.9	6.4	23.4	^	^	^
Monroe	13.8	7.8	24.6	19.5	12.2	31.5	^	^	^	24.1	15.2	38.3	^	^	^	^	^	^
Nassau	20.2	11.2	34.7	19.6	11.1	33.2	23.4	13.7	38.4	21.0	11.5	36.3	^	^	^	^	^	^
Okaloosa	33.4	25.6	42.9	18.9	13.3	26.1	18.5	13.0	25.8	27.2	19.9	36.5	14.4	8.0	24.5	^	^	^
Okeechobee	26.6	14.8	47.7	24.0	13.1	44.3	^	^	^	^	^	^	^	^	^	^	^	^
Orange	16.8	14.3	19.7	15.9	13.6	18.6	18.2	15.6	21.1	18.9	16.0	22.2	12.6	9.8	16.1	10.1	7.6	13.2
Osceola	17.4	12.5	23.8	15.5	10.9	21.5	12.8	8.8	18.3	14.1	9.5	20.4	14.0	8.2	22.9	8.7	4.2	16.3
Palm Beach	20.3	18.5	22.3	14.6	12.9	16.5	18.9	16.9	21.1	24.5	21.9	27.3	11.0	8.9	13.5	7.3	5.3	9.8
Pasco	20.8	17.7	24.8	17.2	13.7	21.7	17.4	13.8	22.0	28.9	23.5	35.4	15.6	10.8	22.5	8.5	4.8	14.5
Pinellas	20.2	18.0	22.7	19.6	17.3	22.2	14.3	12.2	16.7	19.9	17.3	22.9	13.1	10.4	16.4	7.7	5.4	10.7
Polk	19.8	16.8	23.3	19.4	16.2	23.2	19.5	16.5	23.1	29.9	25.5	35.0	9.8	6.7	14.3	13.7	9.3	19.5
Putnam	25.9	16.9	39.8	24.6	15.9	38.4	20.7	12.5	34.0	19.4	10.4	35.0	^	^	^	^	^	^
Saint Johns	19.3	13.6	27.2	17.2	12.3	24.4	14.5	9.9	21.4	23.9	17.2	33.0	13.0	7.4	23.4	9.8	4.5	20.3
Saint Lucie	23.8	19.1	30.0	13.2	9.4	18.5	19.6	14.6	26.1	22.2	16.5	29.9	16.9	10.8	26.2	10.3	4.9	19.6
Santa Rosa	17.4	11.4	26.0	21.0	14.4	30.0	16.5	10.7	24.7	19.6	12.9	29.1	^	^	^	^	^	^
Sarasota	17.6	14.8	21.3	18.4	14.9	23.1	20.1	16.4	24.8	22.9	18.7	28.3	13.9	9.6	20.4	11.4	6.7	18.7
Seminole	14.9	11.4	19.2	11.0	8.1	14.7	16.0	12.3	20.4	15.8	12.2	20.4	10.2	6.5	15.4	5.1	2.7	9.0
Sumter	22.7	16.0	34.6	28.7	18.3	44.8	20.9	13.5	33.9	24.3	15.7	39.3	15.6	8.4	37.3	^	^	^
Suwannee	^	^	^	^	^	^	25.2	13.0	47.7	^	^	^	^	^	^	^	^	^
Taylor	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Union	^	^	^	113.1	68.5	184.3	^	^	^	^	^	^	^	^	^	^	^	^
Volusia	13.6	11.1	16.7	16.1	13.3	19.6	15.8	12.9	19.3	17.5	14.4	21.4	9.8	6.9	14.1	10.7	6.8	16.4
Wakulla	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Walton	15.5	8.2	29.5	14.7	7.5	28.8	^	^	^	^	^	^	^	^	^	^	^	^
Washington	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^

1 Rates are expressed as number of cases per 100,000 population per year, adjusted to the 2000 U.S. standard population.
2 95% Confidence interval.
^ Statistics for cells with fewer than 10 cases are not displayed.

Figure 1. New Cases and Age-Adjusted Incidence Rates for All Cancers by Sex and by Race, Florida, 1981-2008

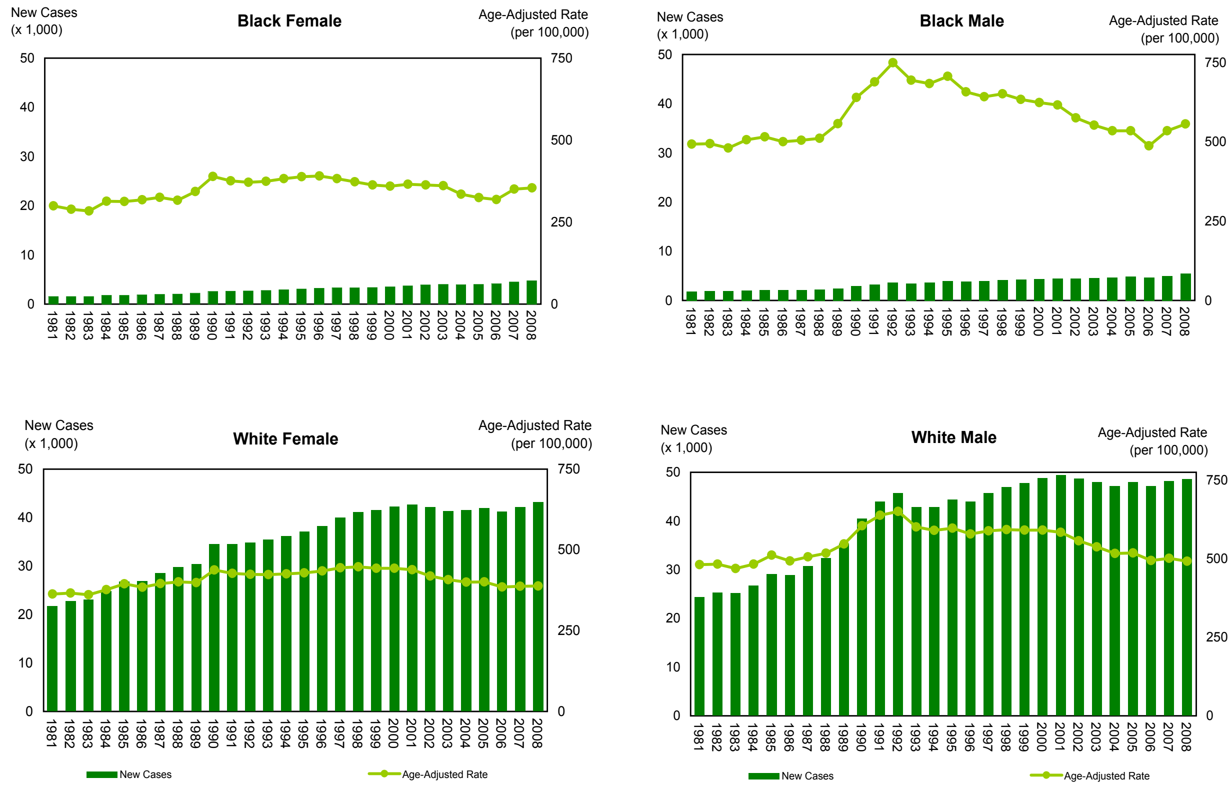
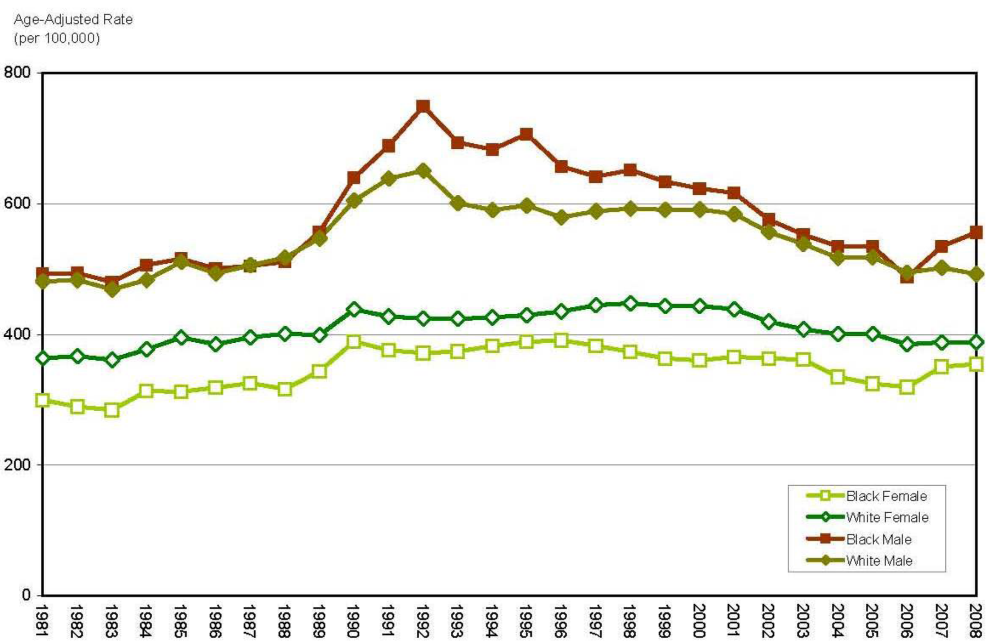
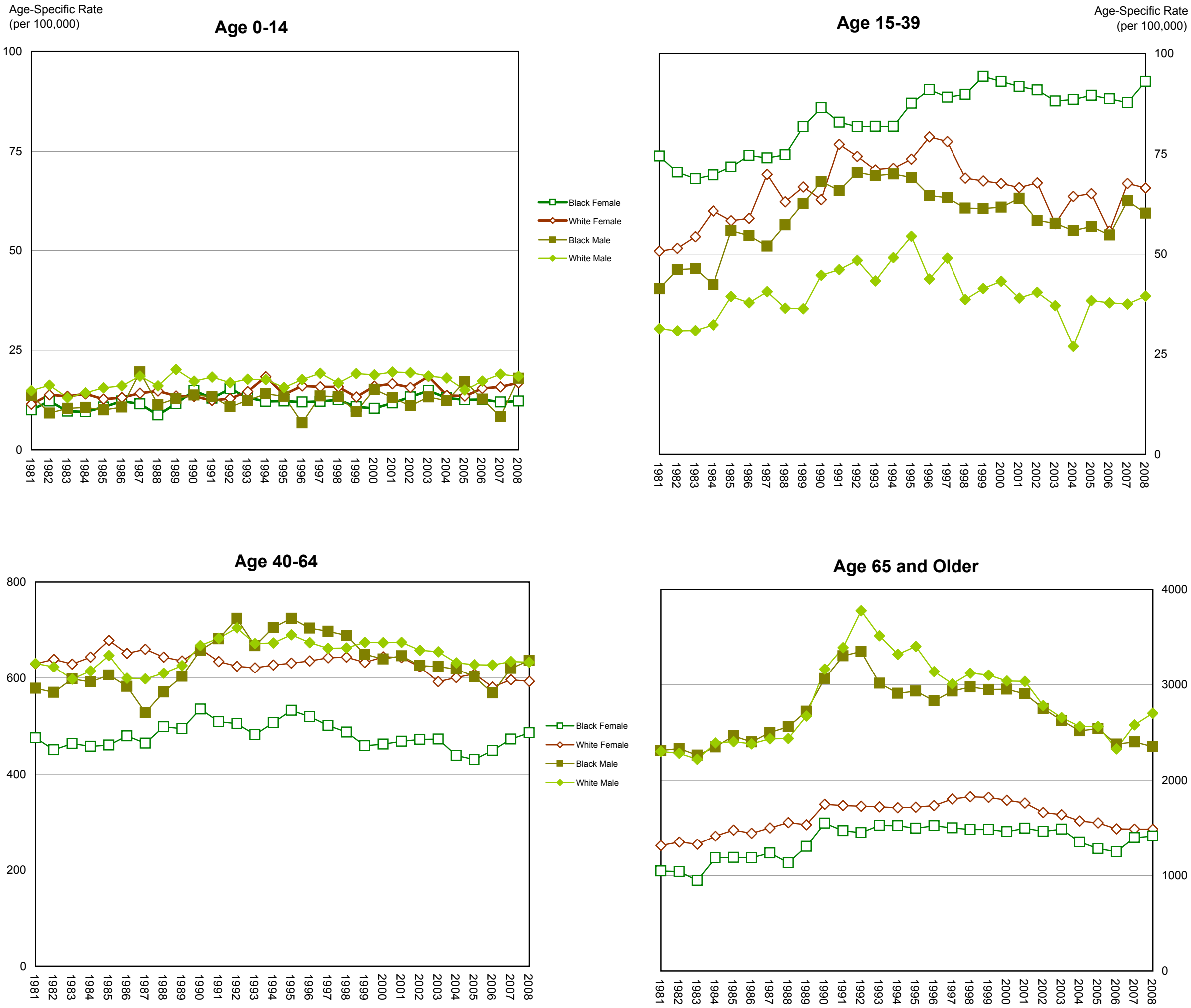


Figure 2. Age-Adjusted Incidence Rates for All Cancers by Sex and by Race, Florida, 1981-2008



Source of data: Florida Cancer Data System

Figure 3. Age-Specific Incidence Rates for All Cancers by Sex, Race, and Age Group, Florida, 1981-2008



Source of data: Florida Cancer Data System

Section 8

Public Health Laboratory Status Report

The Bureau of Laboratories (BOL), a network of four laboratories located in Jacksonville, Lantana, Miami, Pensacola and Tampa, provides population-based diagnostic, screening, monitoring, reference, emergency and research laboratory services. BOL also collects epidemiologic and demographic information to support the core public health functions of the Florida Department of Health (FDOH). Technical services, based upon evolving community requirements, include screening and confirmation tests for: biological and chemical threats and disease outbreak investigations; sexually transmitted diseases; tuberculosis; human immunodeficiency virus (HIV); mosquito (arthropod) -borne viruses; animal rabies; and parasitology. Accurate and timely laboratory data are critical to support informed public health decisions. BOL also provides training to healthcare providers and laboratory scientists; tests samples from potable, environmental, and recreational water sources, pollution spills, and suspect contaminated foods; and certifies environmental and water testing laboratories. BOL provides laboratory screening of all newborns in the state for 34 genetic disorders, which, without detection and early treatment, can lead to death or severe physical and mental disabilities.

BOL supports all 67 county health departments, other Department of Health programs, physicians, hospitals, and numerous state and federal agencies, by providing public health diagnostic, screening and reference laboratory services.

Centennial Anniversary of Tampa and Pensacola Branch Laboratories

The Florida Legislature established the State Board of Health in 1889, which was located in Jacksonville. In 1903, the Legislature established the State Public Health Laboratory, also located in Jacksonville. Seven years later, in 1910, the Tampa and the Pensacola Laboratories were established. Like the Jacksonville Laboratory, the Pensacola and Tampa Laboratories were responsible for providing diagnostic testing to the State Board of Health and to private physicians. With three laboratories up and running, the Bureau of Laboratories was able to provide vital services to what were then the most populous areas of Florida. The Miami Laboratory was established in 1914 and the Tallahassee Laboratory in 1915. The latter closed in 1917, was re-opened in 1921, and closed permanently in 1992. The Orlando Laboratory was opened in 1948 and operated until 1992. Lastly, West Palm Beach/Lantana was opened in 1953 in the basement at the A.G. Holley State Tuberculosis Hospital and since 1982, has had its own separate building on the campus. The Lantana Laboratory was closed in September 2011.

On April 8, 2010 approximately 100 people, including current and former employees, former DOH Secretary Robert Brooks, and former Deputy State Health Officer Rick Hunter, gathered to celebrate the 100th anniversary of the Tampa Public Health Laboratory. Dr. Doug Holt, Director of the Hillsborough County Health Department, read a proclamation from Tampa Mayor Pam Iorio.

Public health professionals, legislators, and education leaders from across the Florida Panhandle met on June 17, 2010 at the J. Earle Bowden Building in Historic Pensacola Village to celebrate the 100th anniversary of the establishment of the Public Health Laboratory in Pensacola. Today's laboratory, located at 50 West Maxwell Street, traces its roots back to 1910 when the City of Pensacola presented a request to the State Board of Health that a laboratory be established to provide diagnostic screening to the State Board of Health and to private physicians. The first laboratory was located in City Hall which is now the T. T. Wentworth Museum. In attendance at the celebration were Representative Dave Murzin, Mr. Ray Walker, Aide for Representative Clay Ford, Billy Sasser from Department of Homeland Security, and Dr. John Parker, the Pensacola Laboratory Director from 1989-2006. Speakers at the event were Dr. Kristina Behan of the University of West Florida's Clinical Laboratory Sciences Department and Dr. Susan Turner, Associate Director of the Escambia County Health Department. A congratulatory letter from Governor Crist was read aloud.

Brucella species
Together with the Bureau of Environmental Public Health Medicine and the Bureau of Epidemiology, the BOL-Jacksonville, BOL-Tampa and BOL-Pensacola were involved in analysis for several cases of brucellosis. Historically, there are five to six cases of brucellosis in Florida each year. However, in 2010 there were nine cases in Florida residents. In addition, the BOL also tested specimens from two other cases: one Alabama resident and one visitor from Nicaragua. In total, the BOL identified 14 *Brucella* species from these 11 cases: nine *Brucella suis*, three *B. melitensis*, and two *B. abortus.*

Due in part to more stringent select agent reporting criteria, an actual increase in the number of brucellosis cases, as well as a lack of timely recognition of *Brucella* in the clinical laboratories, there has been a large increase in potential exposures to *Brucella* species in clinical diagnostic laboratory personnel since sometimes these organisms are worked on without adequate precautions. Despite the recent increase in cases, *Brucella* species remain rarely seen pathogens in the clinical laboratory and automated identification systems often misidentify them or report a result with a low degree of confidence. As such, these isolates tend to be forwarded to more sophisticated diagnostic laboratories for identification as an "unknown organism", potentially exposing a greater number of laboratory workers. An unfortunate example of this occurred in August 2009 when a hospital microbiology laboratory in Hillsborough County sent a culture to a diagnostic reference laboratory in Florida, which then sent the culture to a reference laboratory in North Carolina where it was finally suspected to be a *Brucella* species. The culture was sent to the North Carolina Department of Health and Human Services laboratory, where it was determined to be *Brucella* species by real-time PCR. As the patient was a Florida resident, the isolate was forwarded to BOL-Jacksonville where it was identified as *Brucella suis*. Several personnel at the clinical laboratories were exposed to the organism and unfortunately one microbiologist developed brucellosis resulting in a *B. suis* positive blood culture.

The total number of laboratorians exposed to *Brucella* species from these cases was 85 (75 high risk exposures and 10 low risk). Exposed personnel underwent extensive medical evaluation involving a minimum of 21 days prophylaxis and serological monitoring up to 24 weeks post-exposure.

Dengue Update
The Bureau of Laboratories Virology sections in Tampa and Jacksonville have performed serological assays for the detection of antibodies to dengue virus for many years. Few specimens are tested annually for this rare disease. Nevertheless, this virus causes significant problems worldwide. Because of a study performed in the Tampa laboratory by Dr. Julia Gill in 1996-1997, demonstrating higher rates of imported dengue than previously suspected, molecular assays for detection of dengue virus RNA were developed at the BOL. During 2009, the BOL began development and validation of a real-time RT-PCR molecular assay for dengue. This assay is faster and capable of analyzing more specimens than the traditional gel-based assay. The BOL also has the capability to perform genetic sequencing to assess relationships of various specimens.

When dengue virus appeared in Key West in 2009, BOL-Tampa was able to detect the virus in local mosquitoes and show that it was the same strain detected in locally acquired human cases. During 2010, over 610 serological assays on 332 clinical sera were performed at the BOL Virology units in Tampa and Jacksonville for dengue confirmation, compared to 127 assays on 70 sera in 2009 and 13 assays on eight sera in 2008. IgM antibody indicating a recent infection was detected in 98 sera in 2010, 23 in 2009 and four in 2008. BOL-Tampa Virology has performed PCR assays on all acute (less than five days post onset of symptoms) specimens submitted for dengue testing, in addition to IgM and IgG serological assays; 182 acute sera from 17 Florida counties have been tested by PCR to date. Dengue virus RNA was detected in 53 patient sera. However, 19 of these cases had not yet developed IgM antibody to dengue and would have been considered negative had molecular assays not been performed. Virus types detected included 36 dengue type 1, 12 Dengue type 2, three dengue type 3 and three dengue type 4. Genetic sequencing confirmed virus strains detected from all Key West cases are the same, indicating continued indigenous transmission. This heightened surveillance effort has detected two other instances of locally acquired transmission in two additional counties: dengue 3 in Broward and dengue 2 in Miami-Dade. Genetic sequencing analysis of the detected additional strains aids in determining whether the virus continues to be transmitted, and to date, additional cases related to the Broward and Miami-Dade cases have not been detected.

Biological Defense Program

The 2010 Laboratory Response Network (LRN) National Meeting Planning Committee selected the FDOH BOL to be the recipient of the “Excellence in Partnership” award for building strong working relationships with the Department of Agriculture and Consumer Services, the University of South Florida Center for Biological Defense, and hundreds of sentinel (hospital/commercial) laboratories. BOL established the Advanced Capacity Hospital Laboratory Network for Florida, trained of first responders, and authored the State of Florida Comprehensive Laboratory Response Plan, which has been used as a model for similar plans around the nation.

BOL-Jacksonville and BOL-Pensacola were two of ten laboratories nationwide that participated in a Centers for Disease Contol and Prevention (CDC) Division of Preparedness and Emerging Infections study entitled “Determination of Clinical Specificity of Laboratory Response Network Real-Time PCR Assays Using Leftover Unlinked Human Specimens”. The objective of the study was to determine the clinical specificity for selected LRN real-time PCR assays and demonstrate that routine human specimens will not generate false positive results, thereby increasing the confidence in positive results generated during an actual or suspect bioterrorism event. Almost 3,000 real-time PCR reactions were performed for *Bacillus anthracis, Francisella tularensis, Burkholderia mallei* and *B. pseudomallei* on 100 throat or nasopharyngeal swabs and 30 pleural fluids submitted from local hospital laboratory partners. No false positive results were obtained.

BOL-Jacksonville and BOL-Tampa were invited and participated in the development of a Department of Homeland Security BioWatch Quality Assurance Program Plan (QAPP). The purpose of the QAPP is to increase confidence in all aspects of laboratory procedures in the BioWatch program and provide public health laboratory directors nationwide with sound data necessary for decision-making in the event of a BioWatch Actionable Result.

LabWare Enhancements

In March 2010 BOL upgraded the LabWare Laboratory Information Management System (LIMS) to include functionality that enables the BOL to create and send electronic orders and to receive electronic results from outside laboratories. This functionality can be used to send samples to other public health laboratories for laboratory surge capacity testing. By adding this capability, BOL can help ensure that laboratory testing services for Floridians can be sustained during large outbreaks or in the aftermath of natural disasters.

Newborn Screening Dried Blood Spot Retention Policy

The 6-month retention policy for Newborn Screening dried blood spots was approved and signed by the State Surgeon General on December 13, 2010. Previously there had been no official retention policy and dried blood spots were retained on space available basis.

Severe Combined Immunodeficiency Disease (SCID)

Severe Combined Immunideficiency Disease (SCID), also known as Bubble Boy Disease, is a treatable illness in which an infant fails to develop a normal immune system. After successful treatment, infants with SCID can lead a normal life. The Genetic Testing and Newborn Screening Advisory Council endorsed the SCID as the next marker to be implemented.

2009 Newborn Screening Morbidity Data

The Bureau of Laboratories, in collaboration with FDOH Children Medical Services, manages the newborn screening program for Florida and screens for all disorders recommended by the Secretary's Advisory Committee on Heritable Disorders in Newborns and Children (SACHDNC) with additional tests including cystic fibrosis, totaling 35 diseases and conditions (hearing included). Data included below in Table 1 indicates the disorders screened for as well as their frequency of detection for the year of 2009, the most recent year that data is available.

Table 1. Newborn Screening Morbidity Counts, Florida 2009 (Final)

Conditions	Count
Live Births	221,632
Confirmed Diagnosis by Florida Referral Centers	
Biotinidase Deficiency	0
Partial	6
Congenital Adrenal Hyperplasia	5
Congenital Hypothyroidism	68
Cystic Fibrosis	
2 mutations	25
1 mutation	10
Ultra-High IRT/No mutations	1
Galactosemia (G/G)	1
Variant	1
Sickle Cell	
Sickle Cell Anemia (SS)	140
Hemoglobin SC Disease (SC)	82
Sickle Beta Thalassemia (SA)	9
Disorders detected by Tandem Mass Spectronomy	32
Hearing Loss recognized through NBS Follow-Up Program	249