

Mission:

To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.



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Celeste Philip, MD, MPH
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Vision: To be the Healthiest State in the Nation

Florida Actual versus Expected Teen Births and Repeat Teen Births By County 2015 through 2017

By: Angel Watson, MPH, RHIA

Florida Department of Health, Division of Community Health Promotion
Bureau of Family Health Services
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Introduction

In the United States, teen birth rates have reached historic lows [1]. In Florida, a total of 10,709 babies were born to teens aged 15-19 years in 2017 for a live birth rate of 18.5 per 1,000 teens in this age group. Furthermore, birth rates fell 12.1% for teens aged 15-17 years and 3.8% for teens aged 18-19 years [2]. Although reasons for the decline cannot be fully explained, according to the Centers for Disease Control and Prevention (CDC), teens appear to be less sexually active, and those teens who are sexually active seem to be using birth control more effectively [3].

While teen birth rates have declined, teen pregnancy prevention continues to be a public health priority. Studies show that pregnant teens are more likely to receive late or no prenatal care, have gestational hypertension and anemia, and have inadequate maternal weight gain [4]. Teens are also more likely to have a pre-term delivery and a low birthweight baby, increasing the risk of child developmental delay, illness, and mortality [5]. Additionally, teen mothers are less likely than their peers to complete high school and more likely to live below the poverty level and rely on public assistance [6]. The Department of Health's Family Planning program plays a key role in the prevention of unintended or unwanted pregnancy, including teen pregnancy.

The purpose of this annual analysis is to identify geographic areas in Florida where teen birth rates and repeat teen birth rates are statistically significantly higher than would be expected considering the unique demographics of each area. This information may be used to encourage further and more detailed analyses to investigate reasons for the higher than expected rates and to develop intervention strategies for improving outcomes.

Methods

In this analysis, the actual number of teen births and repeat teen births are compared to the expected number for each county. The expected numbers are calculated by applying the state rates to the data for each county. The assumption is the expected rates for the counties are equal to the statewide rates. The difference between the number of actual and expected births is also tested for statistical significance. In the following tables, an "H" appears for the counties where the number of actual births is statistically significantly higher than the expected number of births and an "L" appears for the counties where the number of actual births is statistically significantly lower than the expected number of births. For counties without an "H" or "L" the number of actual births is not statistically significantly different from the expected number of births. An alpha level of 0.05 is used for this test, which means that for the counties with an "H" or "L" there is a 5% chance that the difference between the actual and expected number is due to random variation.

Note that for larger counties, smaller differences between the statewide rate and the county rate may be statistically significant while the same or greater differences may not be statistically significant in smaller counties. This is because statistical significance depends in part on the magnitude of the numbers used in the calculations. Since the larger counties will have larger female teen populations and more teen births, the differences between the statewide rate and county rates are more likely to be statistically significant. In statistical testing, this is called statistical power. All of the data for the following tables are from the Florida Department of Health CHARTS website at: <http://www.flhealthcharts.com/charts/default.aspx>. The Poisson function in Excel was used for the statistical testing.

Results

In the following tables, actual statistics are compared to expected statistics. Counties with statistically significantly higher than expected statistics are indicated in the tables with an “H.” Counties with statistically significantly lower than expected statistics are indicated in the tables with an “L.” As shown in Table 1, there were 27 counties with an “H” for teen births among females aged 15-17, and 10 counties with an “L” for teen births among females aged 15-17. On Table 2 for teen births among females aged 15-19, there were 45 counties with an “H” and 14 counties with an “L.” On Table 3 for repeat births to teens aged 15-17, there were no counties with an “H” and one county with an “L.” On Table 4 for repeat births to teens aged 15-19, there were six counties with an “H” and six counties with an “L.” On all of the tables, counties without an “H” or an “L” had rates that were not statistically significantly different from the expected rates.

Discussion

One limitation of this analysis is the comparatively high level of variability of rates in smaller counties. Consequently, larger differences in rates for small counties may not be statistically significant while the same or smaller differences may be statistically significant in larger counties. Actual rates that are statistically significantly higher than the expected rates are most likely not a result of random fluctuations and are cause for concern; however, higher rates that are not statistically significant may also warrant further investigation. Additionally, smaller counties with higher than expected rates for a period of several years may also be cause for concern.

This analysis may be used as a basis for establishing priorities and to inform strategies developed to reduce both teen births and repeat teen births in Florida. The rationale is to use the results of this analysis to focus further analysis and efforts on the counties where the risks are significantly high and also analyze factors that contribute to the lower risks seen in some counties.

Current Department of Health Teen Pregnancy Prevention Initiatives and Activities

Teen pregnancy prevention is one of CDC’s top six priorities and is considered a “winnable battle” in public health. Moreover, one of the Healthy People 2020 objectives is to reduce teen pregnancy.

- Prevention of initial or repeat teen births is a Family Planning program objective which aligns with the federal Title X Program priorities and key issues.
- Teen birth rate goals are included in the Department’s Long Range Program Plan (LRPP).
- A county health department (CHD) snapshot measure was developed in 2013 to track the number of teens who adopt an effective or higher method of contraception. Effective or higher contraception use increased from 83.9% in 2016 to 84.1% in 2017.
- CHDs are encouraged to increase reproductive health education including the provision of educational materials describing contraceptive methods to teens in schools and communities.
- CHDs are encouraged to make their family planning clinics teen-friendly. Teen-friendly services are critical to reaching teens and to promote adolescent health. Adolescents face barriers to services that are unique to their age group, such as transportation difficulties and school/work

schedules that conflict with appointments. As such, it is important to make family planning clinics teen-friendly.

- Long acting reversible contraception (LARC) use among teens 15-19 increased from 6.9% in 2016 to 10.1% in 2017 (excluding teens who were pregnant, seeking pregnancy or abstinent). LARC methods are highly effective in preventing pregnancy and are seen as a significant tool in reducing unplanned or unwanted pregnancies.

References:

1. Centers for Disease Control and Prevention. National and State Patterns of Teen Births in the United States, 1940-2013. National Vital Statistics Reports. 2014; 63 (4). http://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_04.pdf. Accessed: September 10, 2015.
2. Florida CHARTS. <http://www.flhealthcharts.com/>. Accessed: June 21, 2018.
3. Centers for Disease Control and Prevention. Reproductive Health: Teen Pregnancy. <http://www.cdc.gov/teenpregnancy/>. Accessed on September 10, 2015.
4. Scholl, TO, Hediger, ML, Belsky, DH. Prenatal care and maternal health during adolescent pregnancy - A review and meta-analysis. *Journal of Adolescent Health*. 1994; 15:444-456.
5. Chandra, PC, Schiavello, HJ, Ravi, B, Weinstein, AG, Hook, FB. Pregnancy outcomes in urban teenagers. *International Journal of Gynecology and Obstetrics*. 2002; 79:117-122.
6. National Campaign to Prevent Teen Pregnancy. Why it Matters: Teen childbearing, education, and economic well-being. July 2012.

**Table 1: Florida Teen Birth Rates for Mothers Ages 15-17
2015 - 2017**

County	2015 - 2017 Number of Females 15-17	2015 - 2017 Actual Number of Births to Mothers 15-17	2015 - 2017 Expected Number of Births to Mothers 15-17	2015 - 2017 Number of Births per 1,000 Females 15-17	Statistical Significance*
Statewide	1,036,821	8,522	8,522	8.2	
Alachua	10,623	86	87	8.1	
Baker	1,468	21	12	14.3	H
Bay	8,345	124	69	14.9	H
Bradford	1,231	24	10	19.5	H
Brevard	28,199	185	232	6.6	L
Broward	102,700	538	844	5.2	L
Calhoun	791	5	7	6.3	
Charlotte	6,080	48	50	7.9	
Citrus	6,062	65	50	10.7	H
Clay	14,151	97	116	6.9	L
Collier	16,064	123	132	7.7	
Columbia	3,466	49	28	14.1	H
Dade	140,460	869	1,154	6.2	L
Desoto	1,586	26	13	16.4	H
Dixie	789	10	6	12.7	
Duval	48,811	572	401	11.7	H
Escambia	15,779	218	130	13.8	H
Flagler	5,303	30	44	5.7	L
Franklin	367	5	3	13.6	
Gadsden	2,520	44	21	17.5	H
Gilchrist	957	12	8	12.5	
Glades	529	4	4	7.6	
Gulf	738	10	6	13.6	
Hamilton	669	7	5	10.5	
Hardee	1,646	25	14	15.2	H
Hendry	2,367	49	19	20.7	H
Hernando	9,433	63	78	6.7	
Highlands	4,452	41	37	9.2	
Hillsborough	76,120	694	626	9.1	H
Holmes	915	25	8	27.3	H
Indian River	6,684	55	55	8.2	
Jackson	1,630	30	13	18.4	H
Jefferson	560	9	5	16.1	H
Lafayette	387	6	3	15.5	
Lake	16,215	139	133	8.6	
Lee	32,525	318	267	9.8	H
Leon	13,118	116	108	8.8	
Levy	1,985	14	16	7.1	
Liberty	412	4	3	9.7	
Madison	907	10	7	11.0	
Manatee	16,882	200	139	11.8	H
Marion	15,883	215	131	13.5	H
Martin	7,235	60	59	8.3	
Monroe	2,638	21	22	8.0	
Nassau	4,442	44	37	9.9	
Okaloosa	9,163	95	75	10.4	H
Okeechobee	2,041	42	17	20.6	H
Orange	73,744	550	606	7.5	L
Osceola	21,195	168	174	7.9	
Palm Beach	71,619	529	589	7.4	L
Pasco	25,856	208	213	8.0	
Pinellas	41,967	342	345	8.1	
Polk	36,376	384	299	10.6	H
Putnam	3,662	57	30	15.6	H
Saint Johns	12,718	57	105	4.5	L
Saint Lucie	15,755	114	129	7.2	
Santa Rosa	9,972	75	82	7.5	
Sarasota	16,351	90	134	5.5	L
Seminole	25,925	92	213	3.5	L
Sumter	2,074	30	17	14.5	H
Suwannee	2,236	42	18	18.8	H
Taylor	949	12	8	12.6	
Union	757	12	6	15.9	H
Volusia	24,698	238	203	9.6	H
Wakulla	1,599	17	13	10.6	
Walton	2,714	43	22	15.8	H
Washington	1,326	15	11	11.3	

* H - county rate is statistically significantly higher than the state rate (alpha=0.05)
L - county rate is statistically significantly lower than the state rate (alpha= 0.05)
Blank - no statistically significant difference between the county rate and the state rate

**Table 2: Florida Teen Birth Rates for Mothers Ages 15-19
2015 - 2017**

County	2015 - 2017 Number of Females 15-19	2015 - 2017 Actual Number of Births to Mothers 15-19	2015 - 2017 Expected Number of Births to Mothers 15-19	2015 - 2017 Number of Births per 1,000 Females 15-19	Statistical Significance*
Statewide	1,721,953	33,850	33,850	19.7	
Alachua	32,527	388	639	11.9	L
Baker	2,506	99	49	39.5	H
Bay	13,591	480	267	35.3	H
Bradford	2,012	92	40	45.7	H
Brevard	44,607	777	877	17.4	L
Broward	162,027	2,207	3,185	13.6	L
Calhoun	1,192	36	23	30.2	H
Charlotte	9,376	212	184	22.6	H
Citrus	8,960	245	176	27.3	H
Clay	21,469	378	422	17.6	L
Collier	24,856	482	489	19.4	
Columbia	5,503	217	108	39.4	H
Dade	230,235	3,477	4,526	15.1	L
Desoto	2,567	103	50	40.1	H
Dixie	1,182	44	23	37.2	H
Duval	80,817	2,182	1,589	27.0	H
Escambia	29,554	811	581	27.4	H
Flagler	7,675	130	151	16.9	L
Franklin	635	37	12	58.3	H
Gadsden	4,155	144	82	34.7	H
Gilchrist	1,473	52	29	35.3	H
Glades	850	13	17	15.3	
Gulf	1,095	33	22	30.1	H
Hamilton	1,026	43	20	41.9	H
Hardee	2,785	115	55	41.3	H
Hendry	3,797	159	75	41.9	H
Hernando	14,291	293	281	20.5	
Highlands	6,926	222	136	32.1	H
Hillsborough	129,210	2,655	2,540	20.5	H
Holmes	1,508	82	30	54.4	H
Indian River	10,265	231	202	22.5	H
Jackson	3,892	148	77	38.0	H
Jefferson	947	26	19	27.5	
Lafayette	691	14	14	20.3	
Lake	25,335	610	498	24.1	H
Lee	52,669	1,196	1,035	22.7	H
Leon	41,224	417	810	10.1	L
Levy	3,060	87	60	28.4	H
Liberty	615	21	12	34.1	H
Madison	1,398	43	27	30.8	H
Manatee	27,115	701	533	25.9	H
Marion	25,340	803	498	31.7	H
Martin	10,971	194	216	17.7	
Monroe	4,207	58	83	13.8	L
Nassau	6,579	162	129	24.6	H
Okaloosa	14,708	401	289	27.3	H
Okeechobee	3,304	151	65	45.7	H
Orange	129,940	2,293	2,554	17.6	L
Osceola	33,750	769	663	22.8	H
Palm Beach	114,833	1,854	2,257	16.1	L
Pasco	41,441	901	815	21.7	H
Pinellas	67,176	1,228	1,321	18.3	L
Polk	60,087	1,659	1,181	27.6	H
Putnam	5,957	255	117	42.8	H
Saint Johns	20,780	200	408	9.6	L
Saint Lucie	24,865	473	489	19.0	
Santa Rosa	14,983	336	295	22.4	H
Sarasota	25,867	411	508	15.9	L
Seminole	41,122	457	808	11.1	L
Sumter	3,235	129	64	39.9	H
Suwannee	3,618	134	71	37.0	H
Taylor	1,478	60	29	40.6	H
Union	1,177	48	23	40.8	H
Volusia	42,206	907	830	21.5	H
Wakulla	2,513	58	49	23.1	
Walton	4,260	140	84	32.9	H
Washington	1,938	67	38	34.6	H

* H - county rate is statistically significantly higher than the state rate (alpha=0.05)
L - county rate is statistically significantly lower than the state rate (alpha= 0.05)
Blank - no statistically significant difference between the county rate and the state rate

**Table 3: Florida Repeat Birth Rates for Mothers Ages 15-17
2015 - 2017**

County	2015 - 2017 Number of Births to Females 15-17	2015 - 2017 Actual Number of Repeat Births to Mothers 15-17	2015 - 2017 Expected Number of Repeat Births to Mothers 15-17	2015 - 2017 Actual Percent Repeat Births to Mothers 15-17	Statistical Significance*
Statewide	8,522	650	650	7.6%	
Alachua	86	4	7	4.7%	
Baker	21	1	2	4.8%	
Bay	124	8	9	6.5%	
Bradford	24	3	2	12.5%	
Brevard	185	12	14	6.5%	
Broward	538	40	41	7.4%	
Calhoun	5	0	0	0.0%	
Charlotte	48	3	4	6.3%	
Citrus	65	5	5	7.7%	
Clay	97	3	7	3.1%	
Collier	123	9	9	7.3%	
Columbia	49	3	4	6.1%	
Dade	869	67	66	7.7%	
Desoto	26	1	2	3.8%	
Dixie	10	1	1	10.0%	
Duval	572	49	44	8.6%	
Escambia	218	17	17	7.8%	
Flagler	30	1	2	3.3%	
Franklin	5	0	0	0.0%	
Gadsden	44	3	3	6.8%	
Gilchrist	12	1	1	8.3%	
Glades	4	0	0	0.0%	
Gulf	10	0	1	0.0%	
Hamilton	7	1	1	14.3%	
Hardee	25	3	2	12.0%	
Hendry	49	5	4	10.2%	
Hernando	63	5	5	7.9%	
Highlands	41	2	3	4.9%	
Hillsborough	694	58	53	8.4%	
Holmes	25	2	2	8.0%	
Indian River	55	4	4	7.3%	
Jackson	30	5	2	16.7%	
Jefferson	9	2	1	22.2%	
Lafayette	6	0	0	0.0%	
Lake	139	8	11	5.8%	
Lee	318	17	24	5.3%	
Leon	116	11	9	9.5%	
Levy	14	2	1	14.3%	
Liberty	4	0	0	0.0%	
Madison	10	0	1	0.0%	
Manatee	200	22	15	11.0%	
Marion	215	20	16	9.3%	
Martin	60	4	5	6.7%	
Monroe	21	0	2	0.0%	
Nassau	44	4	3	9.1%	
Okaloosa	95	6	7	6.3%	
Okeechobee	42	5	3	11.9%	
Orange	550	50	42	9.1%	
Osceola	168	10	13	6.0%	
Palm Beach	529	40	40	7.6%	
Pasco	208	16	16	7.7%	
Pinellas	342	19	26	5.6%	
Polk	384	30	29	7.8%	
Putnam	57	6	4	10.5%	
Saint Johns	57	3	4	5.3%	
Saint Lucie	114	7	9	6.1%	
Santa Rosa	75	1	6	1.3%	L
Sarasota	90	7	7	7.8%	
Seminole	92	6	7	6.5%	
Sumter	30	1	2	3.3%	
Suwannee	42	6	3	14.3%	
Taylor	12	1	1	8.3%	
Union	12	1	1	8.3%	
Volusia	238	23	18	9.7%	
Wakulla	17	0	1	0.0%	
Walton	43	4	3	9.3%	
Washington	15	2	1	13.3%	

* H - county percentage is statistically significantly higher than the state rate (alpha=0.05)
L - county percentage is statistically significantly lower than the state rate (alpha= 0.05)
Blank - no statistically significant difference between the county rate and the state rate

**Table 4: Florida Repeat Birth Rates for Mothers Ages 15-19
2015 - 2017**

County	2015 - 2017 Number of Births to Females 15-19	2015 - 2017 Actual Number of Repeat Births to Mothers 15-19	2015 - 2017 Expected Number of Repeat Births to Mothers 15-19	2015 - 2017 Actual Percent Repeat Births to Mothers 15-19	Statistical Significance*
Statewide	33,850	5,298	5,298	15.7%	
Alachua	388	52	61	13.4%	
Baker	99	16	15	16.2%	
Bay	480	72	75	15.0%	
Bradford	92	18	14	19.6%	
Brevard	777	97	122	12.5%	L
Broward	2,207	371	345	16.8%	
Calhoun	36	10	6	27.8%	
Charlotte	212	32	33	15.1%	
Citrus	245	33	38	13.5%	
Clay	378	50	59	13.2%	
Collier	482	75	75	15.6%	
Columbia	217	48	34	22.1%	H
Dade	3,477	500	544	14.4%	L
Desoto	103	21	16	20.4%	
Dixie	44	6	7	13.6%	
Duval	2,182	346	342	15.9%	
Escambia	811	155	127	19.1%	H
Flagler	130	18	20	13.8%	
Franklin	37	9	6	24.3%	
Gadsden	144	23	23	16.0%	
Gilchrist	52	4	8	7.7%	
Glades	13	1	2	7.7%	
Gulf	33	2	5	6.1%	
Hamilton	43	8	7	18.6%	
Hardee	115	27	18	23.5%	H
Hendry	159	31	25	19.5%	
Hernando	293	40	46	13.7%	
Highlands	222	31	35	14.0%	
Hillsborough	2,655	424	416	16.0%	
Holmes	82	17	13	20.7%	
Indian River	231	32	36	13.9%	
Jackson	148	27	23	18.2%	
Jefferson	26	4	4	15.4%	
Lafayette	14	5	2	35.7%	
Lake	610	89	95	14.6%	
Lee	1,196	192	187	16.1%	
Leon	417	63	65	15.1%	
Levy	87	13	14	14.9%	
Liberty	21	6	3	28.6%	
Madison	43	1	7	2.3%	L
Manatee	701	153	110	21.8%	H
Marion	803	131	126	16.3%	
Martin	194	30	30	15.5%	
Monroe	58	6	9	10.3%	
Nassau	162	22	25	13.6%	
Okaloosa	401	67	63	16.7%	
Okeechobee	151	34	24	22.5%	H
Orange	2,293	388	359	16.9%	
Osceola	769	91	120	11.8%	L
Palm Beach	1,854	291	290	15.7%	
Pasco	901	146	141	16.2%	
Pinellas	1,228	160	192	13.0%	L
Polk	1,659	272	260	16.4%	
Putnam	255	45	40	17.6%	
Saint Johns	200	24	31	12.0%	
Saint Lucie	473	62	74	13.1%	
Santa Rosa	336	42	53	12.5%	
Sarasota	411	65	64	15.8%	
Seminole	457	46	72	10.1%	L
Sumter	129	23	20	17.8%	
Suwannee	134	30	21	22.4%	H
Taylor	60	10	9	16.7%	
Union	48	10	8	20.8%	
Volusia	907	142	142	15.7%	
Wakulla	58	7	9	12.1%	
Walton	140	22	22	15.7%	
Washington	67	10	10	14.9%	

* H - county percentage is statistically significantly higher than the state rate (alpha=0.05)
L - county percentage is statistically significantly lower than the state rate (alpha= 0.05)
Blank - no statistically significant difference between the county rate and the state rate