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



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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 2014 through 2016

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Introduction

In the United States, teen birth rates have reached historic lows with every state seeing since 2007 [1]. In Florida, a total of 11,186 babies were born to teens aged 15-19 years in 2016, for a live birth rate of 18.7 per 1,000 teens in this age group. Furthermore, birth rates fell 9.1% for teens aged 15-17 years, and 8.2% 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 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. Preventing unintended or unwanted pregnancy reduces the incidence of abortion and improves birth outcomes.

The purpose of this annual analysis is to identify geographic areas in the state where teen birth rates and repeat births to teen 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 for the larger counties. 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 32 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 43 counties with an “H” and 13 counties with an “L.” On Table 3 for repeat births to teens aged 15-17, there were two counties with an “H” and two counties with an “L.” On Table 4 for repeat births to teens aged 15-19, there were seven counties with an “H” and eleven 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 teen birth and repeat births to teens 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, the Healthy People 2020 objective 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 81.7% in 2015 to 83.9% in 2016.
- 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 5.4% in 2015 to 6.9% in 2016 (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: August 16, 2017.
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
2014 Through 2016**

County	2014 - 2016 Number of Females 15-17	2014 - 2016 Actual Number of Births to Mothers 15-17	2014 - 2016 Expected Number of Births to Mothers 15-17	2014 - 2016 Number of Births per 1,000 Females 15-17	Statistical Significance*
Statewide	1,064,221	9,166	9,166	8.6	
Alachua	12,461	91	107	7.3	
Baker	1,505	24	13	15.9	H
Bay	9,293	148	80	15.9	H
Bradford	1,239	18	11	14.5	H
Brevard	28,317	190	244	6.7	L
Broward	103,361	573	890	5.5	L
Calhoun	826	14	7	16.9	H
Charlotte	6,246	56	54	9.0	
Citrus	6,057	59	52	9.7	
Clay	13,834	108	119	7.8	
Collier	16,991	133	146	7.8	
Columbia	3,551	58	31	16.3	H
Dade	146,033	917	1,258	6.3	L
Desoto	1,670	29	14	17.4	H
Dixie	768	14	7	18.2	H
Duval	51,848	584	447	11.3	H
Escambia	15,519	219	134	14.1	H
Flagler	5,486	35	47	6.4	L
Franklin	420	10	4	23.8	H
Gadsden	2,494	42	21	16.8	H
Gilchrist	956	14	8	14.6	H
Glades	562	8	5	14.2	
Gulf	727	10	6	13.8	
Hamilton	736	6	6	8.2	
Hardee	1,658	36	14	21.7	H
Hendry	2,531	48	22	19.0	H
Hernando	9,337	66	80	7.1	
Highlands	4,448	58	38	13.0	H
Hillsborough	78,895	790	680	10.0	H
Holmes	943	23	8	24.4	H
Indian River	6,979	56	60	8.0	
Jackson	2,195	36	19	16.4	H
Jefferson	570	4	5	7.0	
Lafayette	392	8	3	20.4	H
Lake	16,055	152	138	9.5	
Lee	32,995	339	284	10.3	H
Leon	14,354	112	124	7.8	
Levy	2,096	18	18	8.6	
Liberty	426	6	4	14.1	
Madison	988	8	9	8.1	
Manatee	17,523	224	151	12.8	H
Marion	15,921	229	137	14.4	H
Martin	7,223	59	62	8.2	
Monroe	2,713	21	23	7.7	
Nassau	4,503	46	39	10.2	
Okaloosa	10,458	102	90	9.8	
Okeechobee	2,260	53	19	23.5	H
Orange	76,968	615	663	8.0	L
Osceola	20,768	191	179	9.2	
Palm Beach	71,585	522	617	7.3	L
Pasco	25,741	212	222	8.2	
Pinellas	42,962	382	370	8.9	
Polk	35,534	422	306	11.9	H
Putnam	3,754	68	32	18.1	H
Saint Johns	12,595	59	108	4.7	L
Saint Lucie	15,826	104	136	6.6	L
Santa Rosa	10,082	78	87	7.7	
Sarasota	16,354	115	141	7.0	L
Seminole	27,915	105	240	3.8	L
Sumter	2,446	32	21	13.1	H
Suwannee	2,305	43	20	18.7	H
Taylor	1,072	15	9	14.0	H
Union	767	12	7	15.6	H
Volusia	25,385	255	219	10.0	H
Wakulla	1,627	16	14	9.8	
Walton	2,824	48	24	17.0	H
Washington	1,348	18	12	13.4	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 2: Florida Teen Birth Rates for Mothers Ages 15-19
2014 Through 2016**

County	2014 - 2016 Number of Females 15-19	2014 - 2016 Actual Number of Births to Mothers 15-19	2014 - 2016 Expected Number of Births to Mothers 15-19	2014 - 2016 Number of Births per 1,000 Females 15-19	Statistical Significance*
Statewide	1,772,672	35,950	35,950	20.3	
Alachua	38,658	407	784	10.5	L
Baker	2,573	111	52	43.1	H
Bay	15,137	523	307	34.6	H
Bradford	2,014	94	41	46.7	H
Brevard	44,816	814	909	18.2	L
Broward	163,101	2,400	3,308	14.7	L
Calhoun	1,219	52	25	42.7	H
Charlotte	9,630	216	195	22.4	
Citrus	8,953	251	182	28.0	H
Clay	20,997	406	426	19.3	
Collier	26,407	527	536	20.0	
Columbia	5,641	238	114	42.2	H
Dade	239,391	3,692	4,855	15.4	L
Desoto	2,759	120	56	43.5	H
Dixie	1,155	42	23	36.4	H
Duval	86,034	2,251	1,745	26.2	H
Escambia	29,167	853	592	29.2	H
Flagler	7,942	133	161	16.7	L
Franklin	720	39	15	54.2	H
Gadsden	4,141	139	84	33.6	H
Gilchrist	1,466	53	30	36.2	H
Glades	908	18	18	19.8	
Gulf	1,060	34	21	32.1	H
Hamilton	1,125	38	23	33.8	H
Hardee	2,817	145	57	51.5	H
Hendry	4,064	166	82	40.8	H
Hernando	14,140	289	287	20.4	
Highlands	6,933	257	141	37.1	H
Hillsborough	133,908	2,880	2,716	21.5	H
Holmes	1,550	82	31	52.9	H
Indian River	10,786	241	219	22.3	
Jackson	3,724	142	76	38.1	H
Jefferson	986	18	20	18.3	
Lafayette	704	16	14	22.7	
Lake	25,120	669	509	26.6	H
Lee	53,647	1,271	1,088	23.7	H
Leon	45,298	439	919	9.7	L
Levy	3,229	93	65	28.8	H
Liberty	638	23	13	36.1	H
Madison	1,501	42	30	28.0	H
Manatee	28,253	789	573	27.9	H
Marion	25,421	808	516	31.8	H
Martin	11,065	201	224	18.2	
Monroe	4,334	69	88	15.9	L
Nassau	6,686	157	136	23.5	H
Okaloosa	16,779	421	340	25.1	H
Okeechobee	3,681	162	75	44.0	H
Orange	135,684	2,453	2,752	18.1	L
Osceola	33,085	864	671	26.1	H
Palm Beach	114,919	1,904	2,331	16.6	L
Pasco	41,248	915	837	22.2	H
Pinellas	68,913	1,316	1,398	19.1	L
Polk	58,747	1,784	1,191	30.4	H
Putnam	6,103	287	124	47.0	H
Saint Johns	20,586	209	417	10.2	L
Saint Lucie	25,001	484	507	19.4	
Santa Rosa	15,142	331	307	21.9	
Sarasota	25,909	465	525	17.9	L
Seminole	44,316	499	899	11.3	L
Sumter	3,806	127	77	33.4	H
Suwannee	3,752	141	76	37.6	H
Taylor	1,651	67	33	40.6	H
Union	1,171	51	24	43.6	H
Volusia	43,410	931	880	21.4	H
Wakulla	2,551	67	52	26.3	H
Walton	4,436	145	90	32.7	H
Washington	1,964	79	40	40.2	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
2014 Through 2016**

County	2014 - 2016 Number of Births to Females 15-17	2014 - 2016 Actual Number of Repeat Births to Mothers 15-17	2014 - 2016 Expected Number of Repeat Births to Mothers 15-17	2014 - 2016 Actual Percent Repeat Births to Mothers 15-17	Statistical Significance*
Statewide	9,166	687	686	7.5%	
Alachua	91	6	7	6.6%	
Baker	24	1	2	4.2%	
Bay	148	8	11	5.4%	
Bradford	18	2	1	11.1%	
Brevard	190	11	14	5.8%	
Broward	573	41	43	7.2%	
Calhoun	14	0	1	0.0%	
Charlotte	56	6	4	10.7%	
Citrus	59	2	4	3.4%	
Clay	108	3	8	2.8%	L
Collier	133	10	10	7.5%	
Columbia	58	3	4	5.2%	
Dade	917	75	69	8.2%	
Desoto	29	1	2	3.4%	
Dixie	14	1	1	7.1%	
Duval	584	51	44	8.7%	
Escambia	219	19	16	8.7%	
Flagler	35	1	3	2.9%	
Franklin	10	0	1	0.0%	
Gadsden	42	2	3	4.8%	
Gilchrist	14	1	1	7.1%	
Glades	8	1	1	12.5%	
Gulf	10	0	1	0.0%	
Hamilton	6	0	0	0.0%	
Hardee	36	4	3	11.1%	
Hendry	48	4	4	8.3%	
Hernando	66	5	5	7.6%	
Highlands	58	3	4	5.2%	
Hillsborough	790	78	59	9.9%	H
Holmes	23	3	2	13.0%	
Indian River	56	3	4	5.4%	
Jackson	36	5	3	13.9%	
Jefferson	4	0	0	0.0%	
Lafayette	8	0	1	0.0%	
Lake	152	11	11	7.2%	
Lee	339	19	25	5.6%	
Leon	112	8	8	7.1%	
Levy	18	1	1	5.6%	
Liberty	6	0	0	0.0%	
Madison	8	0	1	0.0%	
Manatee	224	22	17	9.8%	
Marion	229	21	17	9.2%	
Martin	59	4	4	6.8%	
Monroe	21	0	2	0.0%	
Nassau	46	4	3	8.7%	
Okaloosa	102	6	8	5.9%	
Okeechobee	53	7	4	13.2%	
Orange	615	53	46	8.6%	
Osceola	191	14	14	7.3%	
Palm Beach	522	39	39	7.5%	
Pasco	212	11	16	5.2%	
Pinellas	382	24	29	6.3%	
Polk	422	29	32	6.9%	
Putnam	68	6	5	8.8%	
Saint Johns	59	3	4	5.1%	
Saint Lucie	104	10	8	9.6%	
Santa Rosa	78	1	6	1.3%	L
Sarasota	115	5	9	4.3%	
Seminole	105	5	8	4.8%	
Sumter	32	1	2	3.1%	
Suwannee	43	7	3	16.3%	H
Taylor	15	1	1	6.7%	
Union	12	1	1	8.3%	
Volusia	255	18	19	7.1%	
Wakulla	16	0	1	0.0%	
Walton	48	4	4	8.3%	
Washington	18	2	1	11.1%	

* 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
2014 Through 2016**

County	2014 - 2016 Number of Births to Females 15-19	2014 - 2016 Actual Number of Repeat Births to to Mothers 15-19	2014 - 2016 Expected Number of Repeat Births to to Mothers 15-19	2014 - 2016 Actual Percent Repeat Births to to Mothers 15-19	Statistical Significance*
Statewide	35,950	5,784	5,785	16.1%	
Alachua	407	57	65	14.0%	
Baker	111	18	18	16.2%	
Bay	523	66	84	12.6%	L
Bradford	94	20	15	21.3%	
Brevard	814	103	131	12.7%	L
Broward	2,400	433	386	18.0%	H
Calhoun	52	10	8	19.2%	
Charlotte	216	34	35	15.7%	
Citrus	251	36	40	14.3%	
Clay	406	45	65	11.1%	L
Collier	527	84	85	15.9%	
Columbia	238	40	38	16.8%	
Dade	3,692	550	594	14.9%	L
Desoto	120	19	19	15.8%	
Dixie	42	4	7	9.5%	
Duval	2,251	357	362	15.9%	
Escambia	853	178	137	20.9%	H
Flagler	133	17	21	12.8%	
Franklin	39	5	6	12.8%	
Gadsden	139	27	22	19.4%	
Gilchrist	53	4	9	7.5%	
Glades	18	3	3	16.7%	
Gulf	34	2	5	5.9%	
Hamilton	38	8	6	21.1%	
Hardee	145	28	23	19.3%	
Hendry	166	30	27	18.1%	
Hernando	289	45	47	15.6%	
Highlands	257	39	41	15.2%	
Hillsborough	2,880	507	463	17.6%	H
Holmes	82	15	13	18.3%	
Indian River	241	40	39	16.6%	
Jackson	142	24	23	16.9%	
Jefferson	18	1	3	5.6%	
Lafayette	16	2	3	12.5%	
Lake	669	106	108	15.8%	
Lee	1,271	194	205	15.3%	
Leon	439	69	71	15.7%	
Levy	93	17	15	18.3%	
Liberty	23	6	4	26.1%	
Madison	42	2	7	4.8%	L
Manatee	789	181	127	22.9%	H
Marion	808	133	130	16.5%	
Martin	201	34	32	16.9%	
Monroe	69	8	11	11.6%	
Nassau	157	22	25	14.0%	
Okaloosa	421	79	68	18.8%	
Okeechobee	162	38	26	23.5%	H
Orange	2,453	410	395	16.7%	
Osceola	864	118	139	13.7%	L
Palm Beach	1,904	320	306	16.8%	
Pasco	915	144	147	15.7%	
Pinellas	1,316	170	212	12.9%	L
Polk	1,784	304	287	17.0%	
Putnam	287	62	46	21.6%	H
Saint Johns	209	21	34	10.0%	L
Saint Lucie	484	69	78	14.3%	
Santa Rosa	331	41	53	12.4%	L
Sarasota	465	68	75	14.6%	
Seminole	499	59	80	11.8%	L
Sumter	127	23	20	18.1%	
Suwannee	141	39	23	27.7%	H
Taylor	67	14	11	20.9%	
Union	51	11	8	21.6%	
Volusia	931	128	150	13.7%	L
Wakulla	67	9	11	13.4%	
Walton	145	22	23	15.2%	
Washington	79	12	13	15.2%	

* 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