Age-standardized STD rates

Florida Department of Health - Alachua County - Disease Control Unit

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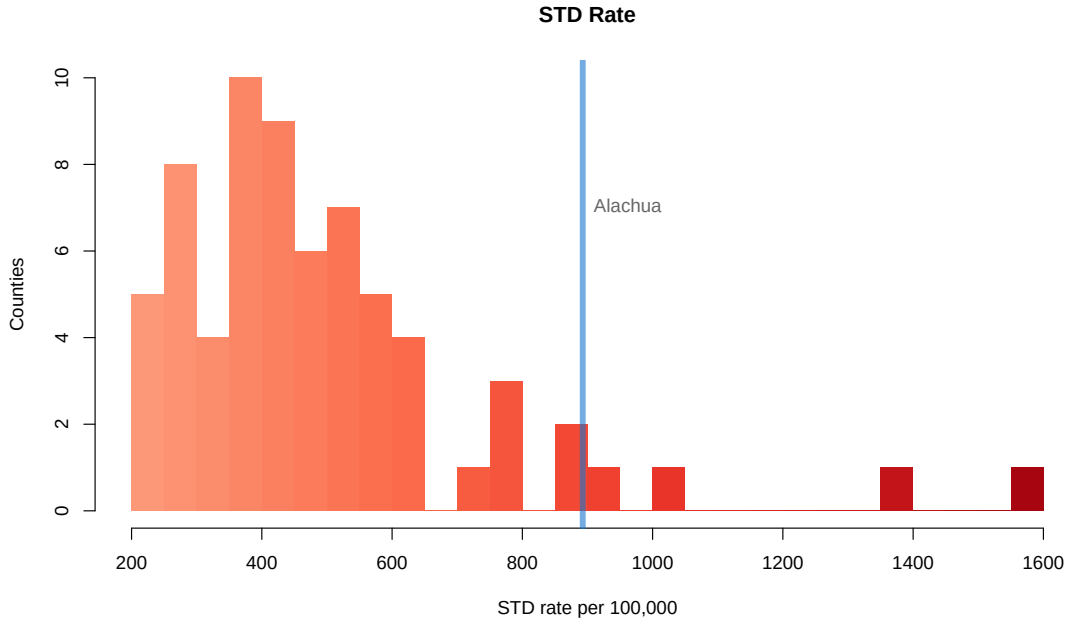
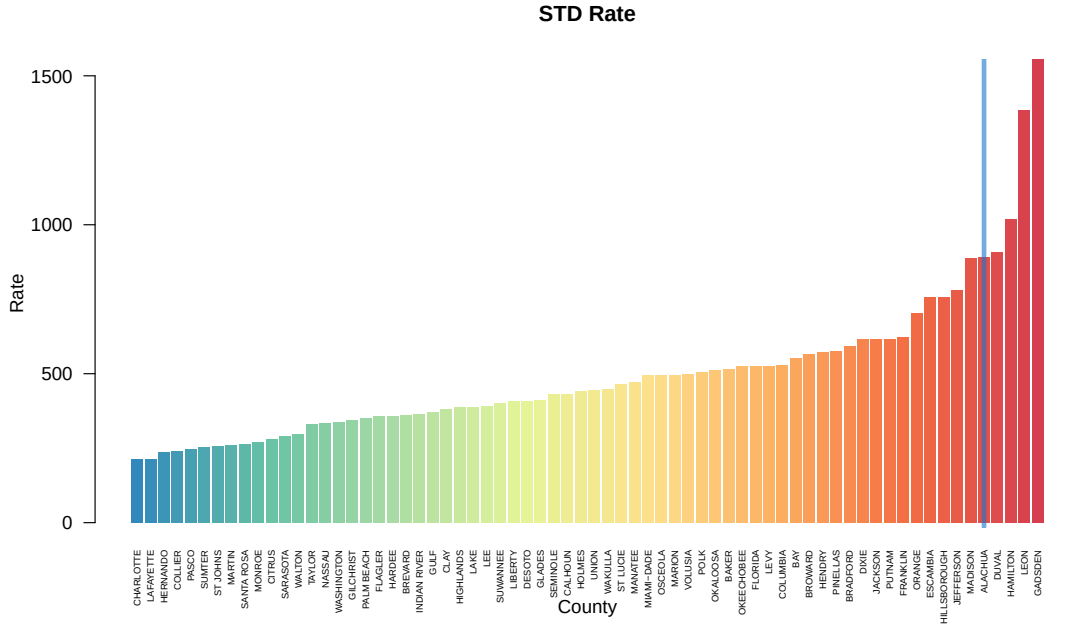
STDs in Alachua County

Alachua County's STD rate (862 per 100,000) is 64 percent higher than the Florida composite rate (525 per 100,000), placing us at 4th worst in the State. Given our population size, this means that we have 834 more STD cases than we would have if our rate were identical to Florida's. Compared to Charlotte County (the state leader with a rate of 213 per 100,000), we have an excess 1600 STD cases per year.





[1]The tabular figures and charts in this report reflect slightly different figures. That is because they were calculated via age groups instead of as a composite (a necessary step for age adjustment); discrepancies, therefore, come from rounding approximations for individual age groups. These differences are minor (+/- 3-5 percent).

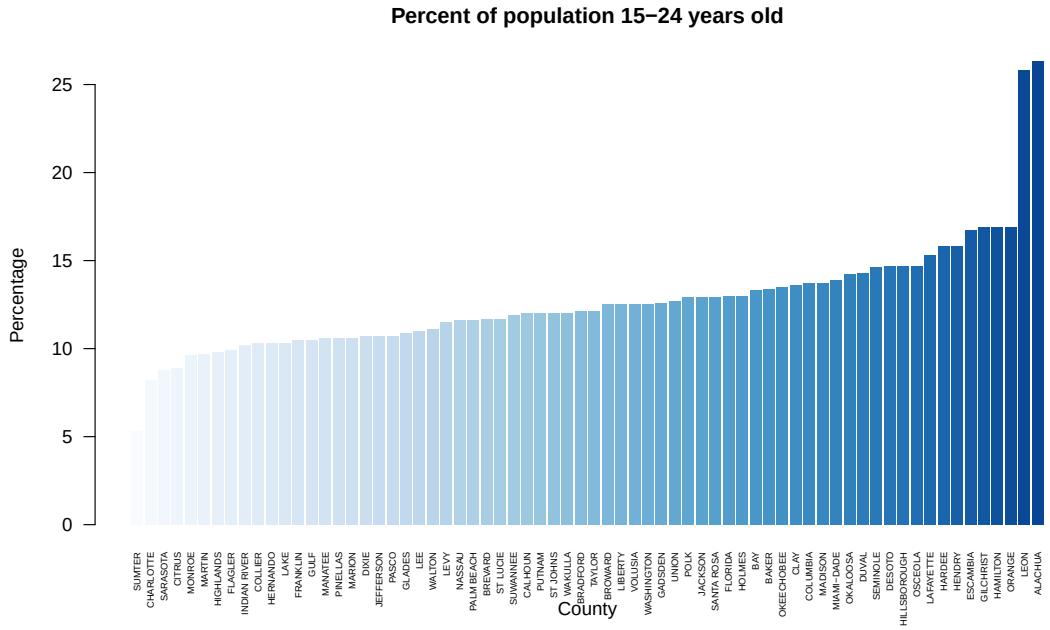
Are we really doing that poorly?

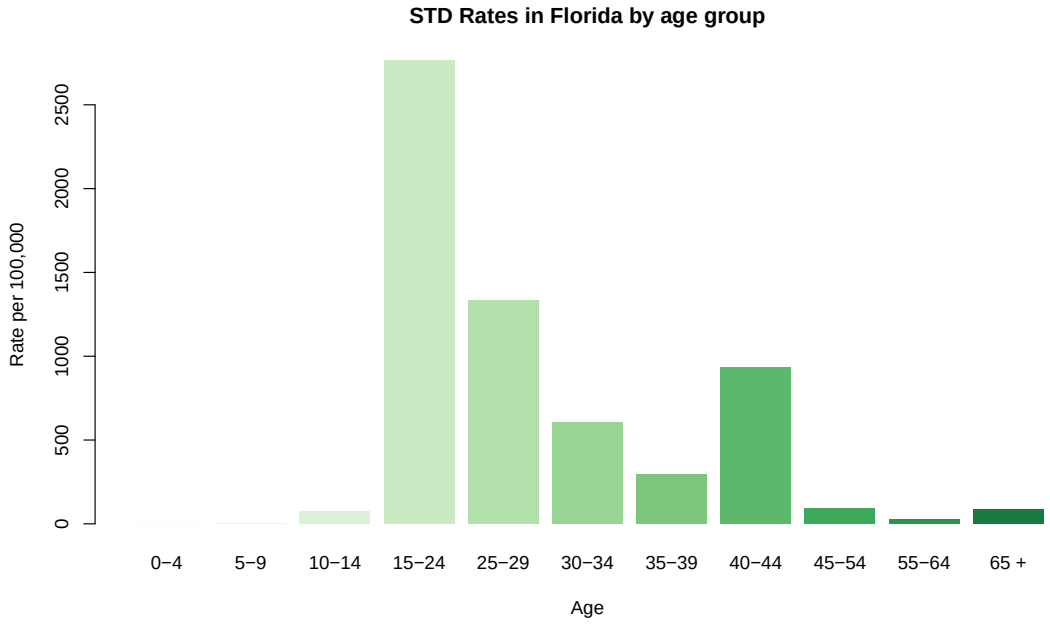
It has been suggested that part of our poor STD rate might be attributable to our county's lopsided demographic profile. The logic for this suggestion is as follows:

1. Alachua has lots of 15-24 year-olds.
2. 15-24 year-olds have lots of STDs.

These assumptions are correct.

Alachua has more 15-24 year-olds (as a share of total county population) than any other county in Florida. 15-24 year-olds are (by far) the age group with the highest STD rate. See below charts:



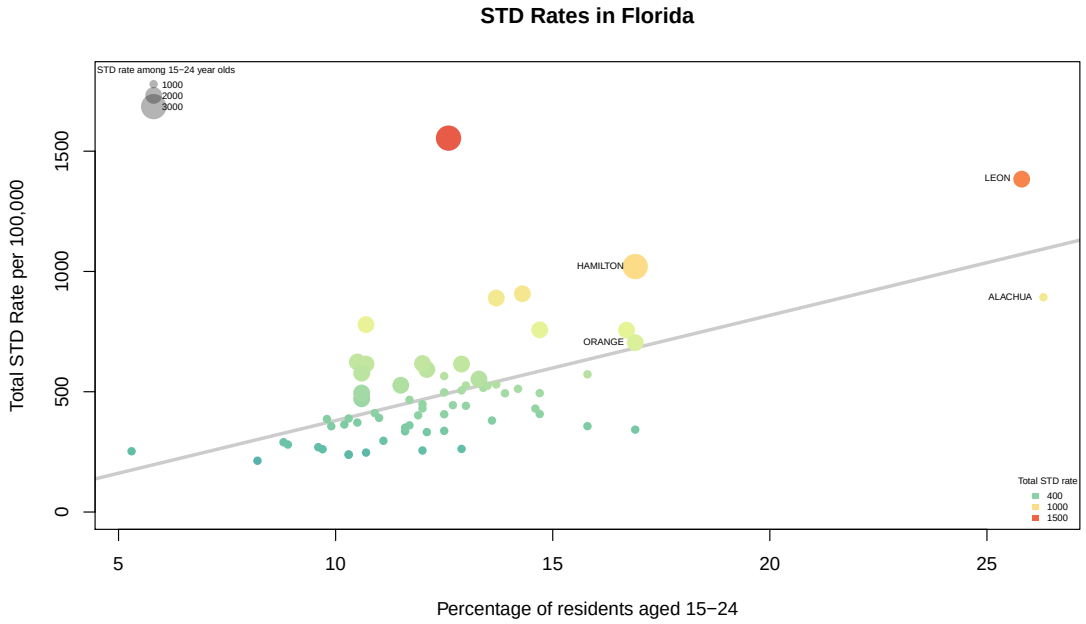


15-24 year-olds skew the rate

Alachua has the largest percentage of those who are most likely to get STDs (15-24 year-olds). Leon is a close second (nearly as many 15-24 year-olds).

Having such a large population of 15-24 year-olds can skew the STD rates of counties like Leon and Alachua in two ways:

1. It inflates the rate directly (since those most likely to get STDs are also the most populous group).
2. It inflates the rate indirectly through contagion (since 15-24 year-olds plausibly infect those in slightly older age groups, who in turn infect those in slightly older age groups, etc.).



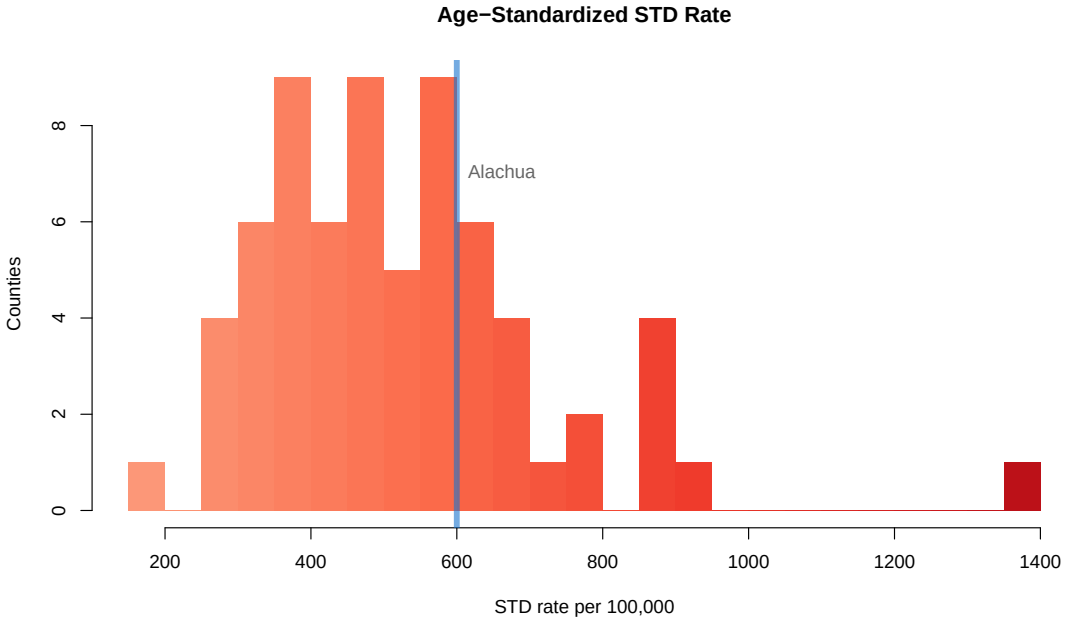
What if our population weren't so young?

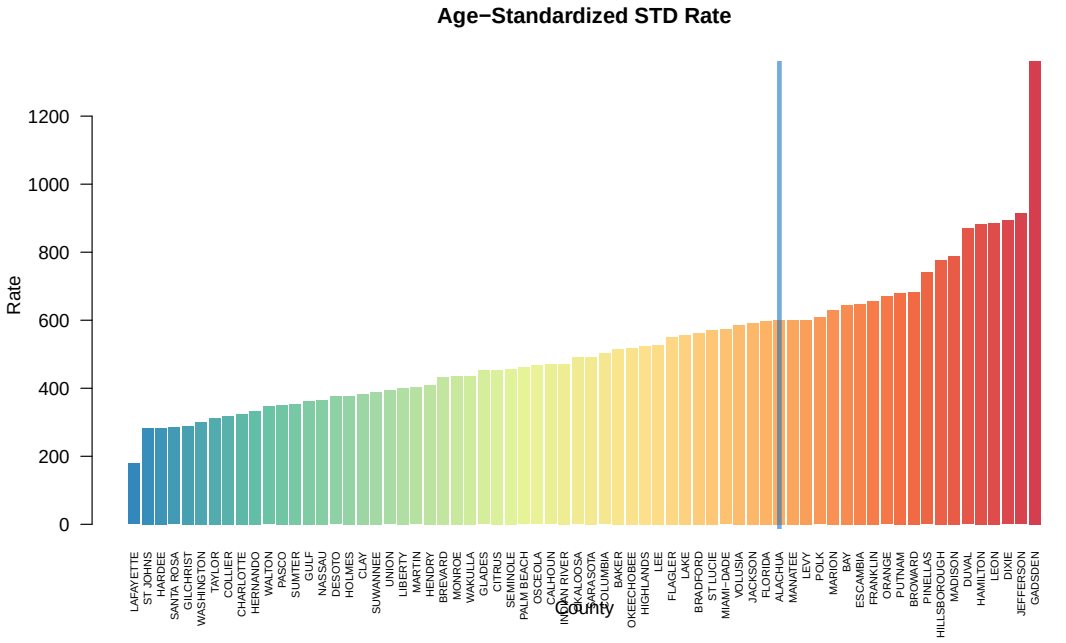
Age Standardization

We can measure the exact skewing effect of our demographic profile via age "standardization." This means calculating the number of people we would have in each age group if our population exactly resembled Florida's (in terms of age). And having done that, we retroactively apply our age-group specific incidence rates to the new "imagined" population sizes, and from there re-calculate an "adjusted" incidence rate. And then do the same for every other county so that we can compare to something.

Results

Standardizing for age brings our STD rate down to 599.9 per 100,000, much closer to the State STD rate of 525 per 100,000. What does this mean? If our population had the same age profile as Florida's, we could expect to have an STD rate similar to Florida's.





Limitations

Age standardization is a theoretical exercise, and is "unreal" in the sense that it supposes certain constants (STD rate for an age group) in changing conditions (differing population sizes).

Age is only one component of the "demographic" factors that determine the incidence of STDs. Controlling for sociodemographic characteristics like rural/urban conditions, race, education, etc. could give us a clearer picture.

The standardization carried out for this report used composite age groups (5 to 10 year groupings), which masks some differences (particularly in the crucial 15-24 year-old group).

Technical details

The analysis of this data was done in an R environment using original script and compiled via Sweave and LaTeX. The population size data comes from the 2010 U.S. Census. The total STD numbers per county comes from Alex's table.

This is intended for internal use. Let me know if you'd like anything "cleaned up" to share with others.

What follows on the next two pages is the output of this analysis in tabular form.

County	0-4	5-9	10-14	15-24	25-29	30-34	35-39	40-44	45-54	55-64	65 +	STD rate	Adj. rate
ALACHUA	0	0	151	2524	1358	646	365	1112	100	20	139	893	600
BAKER	0	0	55	2590	1186	793	271	528	0	0	0	516	515
BAY	0	0	68	3526	1470	385	104	648	51	13	47	553	645
BRADFORD	0	0	202	3191	859	416	143	495	49	59	0	593	562
BREVARD	0	4	103	2130	941	454	175	470	45	10	74	360	433
BROWARD	1	0	60	2779	1472	685	423	1483	182	57	134	565	682
CALHOUN	0	0	0	2198	474	201	305	1562	112	0	0	431	469
CHARLOTTE	0	0	41	1861	707	234	157	122	18	0	0	213	324
CITRUS	0	0	62	2350	873	377	120	284	43	0	192	280	453
CLAY	0	0	56	1989	895	385	206	373	10	18	0	380	382
COLLIER	0	0	44	1450	784	318	234	343	44	8	78	239	318
COLUMBIA	0	0	0	2553	1418	521	204	245	106	46	0	530	502
DESOTO	0	0	314	2049	713	284	248	0	87	0	0	407	376
DIXIE	0	0	113	3168	1364	723	229	3243	96	45	550	615	893
DUVAL	0	3	102	4038	1985	889	368	1488	136	34	68	907	870
ESCAMBIA	0	0	91	3111	1388	742	320	819	72	28	95	756	647
FLAGLER	0	0	116	2629	982	584	167	378	22	13	367	356	552
FRANKLIN	0	0	176	3884	1384	437	230	0	111	0	0	623	657
GADSDEN	0	0	218	6777	2882	1979	657	1268	231	64	0	1554	1361
GILCHRIST	0	0	0	1384	1000	571	98	0	0	44	0	342	289
GLADES	0	0	0	1776	2222	387	637	0	130	0	0	411	452
GULF	0	0	120	2247	376	175	165	0	119	0	0	372	363
HAMILTON	0	0	116	5463	1157	367	450	459	104	0	0	1020	883
HARDEE	0	0	0	1621	725	240	54	0	62	0	0	357	283
HENDRY	0	0	66	2045	863	513	137	406	72	60	0	572	409
HERNANDO	0	0	43	1850	638	269	205	232	36	8	0	238	333
HIGHLANDS	0	0	78	2784	1404	474	273	322	26	0	0	387	524
HILLSBOROUGH	1	0	115	3724	1721	812	376	1157	109	34	60	757	778
HOLMES	0	0	85	2385	736	170	80	0	0	0	0	442	376
INDIAN RIVER	0	0	68	2498	1196	443	168	268	76	23	0	364	471

Table 1: STD rate table

County	0-4	5-9	10-14	15-24	25-29	30-34	35-39	40-44	45-54	55-64	65 +	STD rate	Adj. rate
JACKSON	0	0	246	3117	919	421	287	553	38	0	166	615	592
JEFFERSON	0	0	418	4343	1641	938	485	1942	44	0	0	779	914
LAFAYETTE	0	0	0	848	231	97	105	633	0	0	0	214	179
LAKE	0	0	62	2777	1408	568	234	517	39	14	65	389	557
LEE	0	0	106	2633	1117	490	247	543	46	21	97	391	527
LEON	0	0	135	4168	2173	1053	514	1109	105	39	62	1384	885
LEVY	82	0	39	3208	1471	286	130	853	17	16	0	527	602
LIBERTY	0	0	0	2014	435	0	127	1370	90	0	0	406	401
MADISON	0	0	267	3939	1253	853	595	426	0	0	397	890	790
MANATEE	5	0	119	3210	1234	570	244	578	44	12	27	471	601
MARION	0	0	66	3217	1730	534	186	540	46	0	56	495	630
MARTIN	0	0	42	2020	992	365	201	313	24	9	84	261	402
MIAMI-DADE	0	1	70	2270	1190	593	334	1337	141	46	158	494	573
MONROE	0	0	0	1577	660	296	315	1353	70	16	287	270	436
NASSAU	0	0	22	1937	950	309	190	289	17	0	0	336	365
OKALOOSA	0	0	33	2477	1396	437	147	463	38	4	38	512	491
OKEECHOBEE	0	0	74	2284	1513	741	302	604	54	71	0	525	519
ORANGE	1	0	98	3103	1482	704	351	1008	121	34	71	704	670
OSCEOLA	0	0	41	2092	1151	597	262	818	37	30	26	494	467
PALM BEACH	0	0	59	2033	1128	438	249	805	65	28	76	351	460
PASCO	0	0	11	1692	867	320	172	309	38	2	108	247	351
PINELLAS	0	0	94	3693	1587	799	306	870	92	21	76	577	741
POLK	0	0	71	2870	1371	644	281	898	71	28	89	506	608
PUTNAM	0	0	208	3366	1712	977	434	364	57	19	0	617	679
ST JOHNS	0	0	0	1479	597	237	155	383	12	11	0	256	283
ST LUCIE	0	0	66	2829	1358	568	273	726	60	8	31	467	571
SANTA ROSA	0	0	40	1468	612	215	101	431	39	5	0	262	285
SARASOTA	0	0	27	2279	1048	494	199	595	56	14	199	290	492
SEMINOLE	0	0	32	2354	934	424	163	543	39	16	60	430	457
SUMTER	0	0	24	1852	652	216	72	282	40	16	134	253	353
SUWANNEE	0	0	165	1771	810	472	176	696	79	18	0	402	390
TAYLOR	0	0	372	1718	560	241	219	0	0	32	0	332	312
UNION	0	0	0	2390	625	219	127	337	0	0	0	444	394
VOLUSIA	4	0	90	2714	1314	555	267	1002	56	12	99	497	587
WAKULLA	0	0	53	2755	727	375	96	0	19	0	0	448	437
WALTON	0	0	131	1810	467	280	112	655	53	0	0	296	346
WASHINGTON	0	0	127	1757	509	345	118	0	27	0	0	337	301

Table 2: STD rate table (cont.)