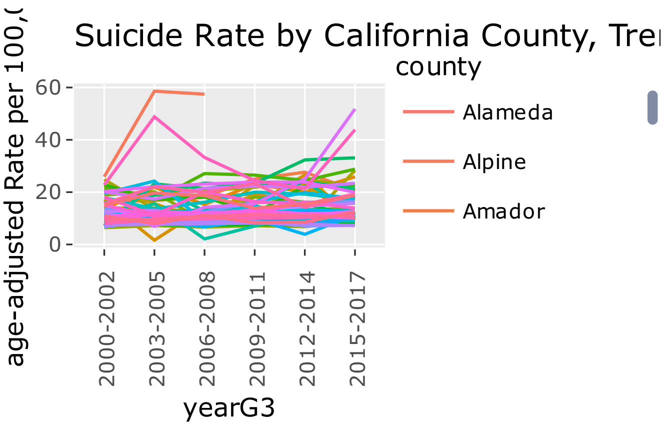
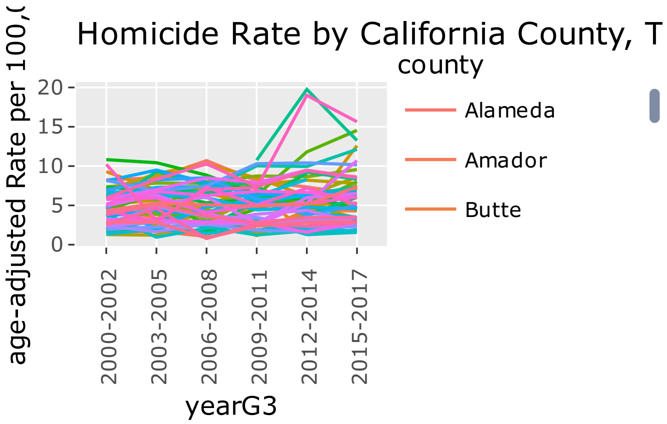
Suicide-Homicide Trends by County

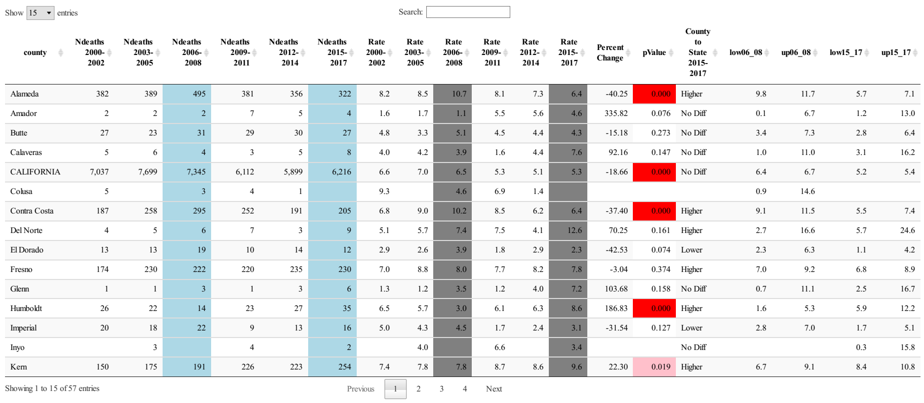
Fusion Center

July 2019





HOMICIDES - County Level



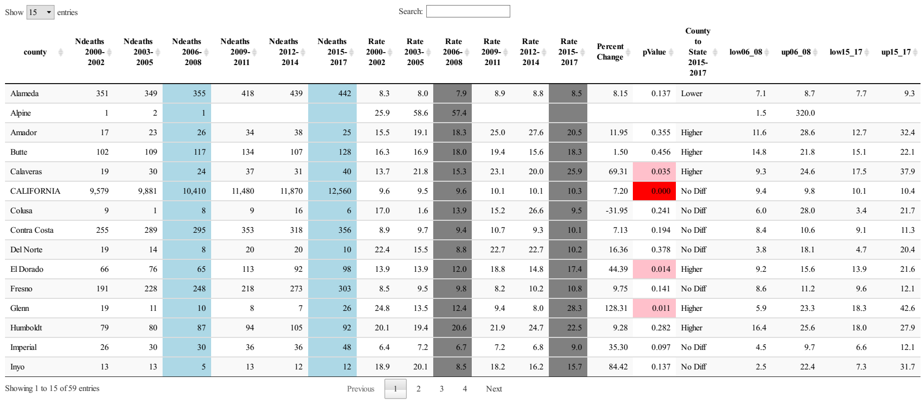
county	Ndeaths 2000-2002	Ndeaths 2003-2005	Ndeaths 2006-2008	Ndeaths 2009-2011	Ndeaths 2012-2014	Ndeaths 2015-2017	Rate 2000-2002	Rate 2003-2005	Rate 2006-2008	Rate 2009-2011	Rate 2012-2014	Rate 2015-2017	Percent Change	pValue	County to State 2015-2017	low06_08	up06_08	low15_17	up15_17
Alameda	382	389	495	381	356	322	8.2	8.5	10.7	8.1	7.3	6.4	-40.25	0.000	Higher	9.8	11.7	5.7	7.1
Amador	2	2	2	7	5	4	1.6	1.7	1.1	5.5	5.6	4.6	335.82	0.076	No Diff	0.1	6.7	1.2	13.0
Butte	27	23	31	29	30	27	4.8	3.3	5.1	4.5	4.4	4.3	-15.18	0.273	No Diff	3.4	7.3	2.8	6.4
Calaveras	5	6	4	3	5	8	4.0	4.2	3.9	1.6	4.4	7.6	92.16	0.147	No Diff	1.0	11.0	3.1	16.2
CALIFORNIA	7,037	7,699	7,345	6,112	5,899	6,216	6.6	7.0	6.5	5.3	5.1	5.3	-18.66	0.000	No Diff	6.4	6.7	5.2	5.4
Colusa	5		3	4	1		9.3		4.6	6.9	1.4					0.9	14.6		
Contra Costa	187	258	295	252	191	205	6.8	9.0	10.2	8.5	6.2	6.4	-37.40	0.000	Higher	9.1	11.5	5.5	7.4
Del Norte	4	5	6	7	3	9	5.1	5.7	7.4	7.5	4.1	12.6	70.25	0.161	Higher	2.7	16.6	5.7	24.6
El Dorado	13	13	19	10	14	12	2.9	2.6	3.9	1.8	2.9	2.3	-42.53	0.074	Lower	2.3	6.3	1.1	4.2
Fresno	174	230	222	220	235	230	7.0	8.8	8.0	7.7	8.2	7.8	-3.04	0.374	Higher	7.0	9.2	6.8	8.9
Glenn	1	1	3	1	3	6	1.3	1.2	3.5	1.2	4.0	7.2	103.68	0.158	No Diff	0.7	11.1	2.5	16.7
Humboldt	26	22	14	23	27	35	6.5	5.7	3.0	6.1	6.3	8.6	186.83	0.000	Higher	1.6	5.3	5.9	12.2
Imperial	20	18	22	9	13	16	5.0	4.3	4.5	1.7	2.4	3.1	-31.54	0.127	Lower	2.8	7.0	1.7	5.1
Inyo		3		4		2		4.0		6.6		3.4			No Diff			0.3	15.8
Kern	150	175	191	226	223	254	7.4	7.8	7.8	8.7	8.6	9.6	22.30	0.019	Higher	6.7	9.1	8.4	10.8

Showing 1 to 15 of 57 entries

- summary of county homicide rates compared to state rate

```
## # A tibble: 2 x 4
##   Higher Lower `No Diff` total
##    <dbl> <dbl>     <dbl> <dbl>
## 1   17    18          19    54
## 2   31.5  33.3        35.2 100
```

SUICIDES - County Level



Show 15 entries Search:

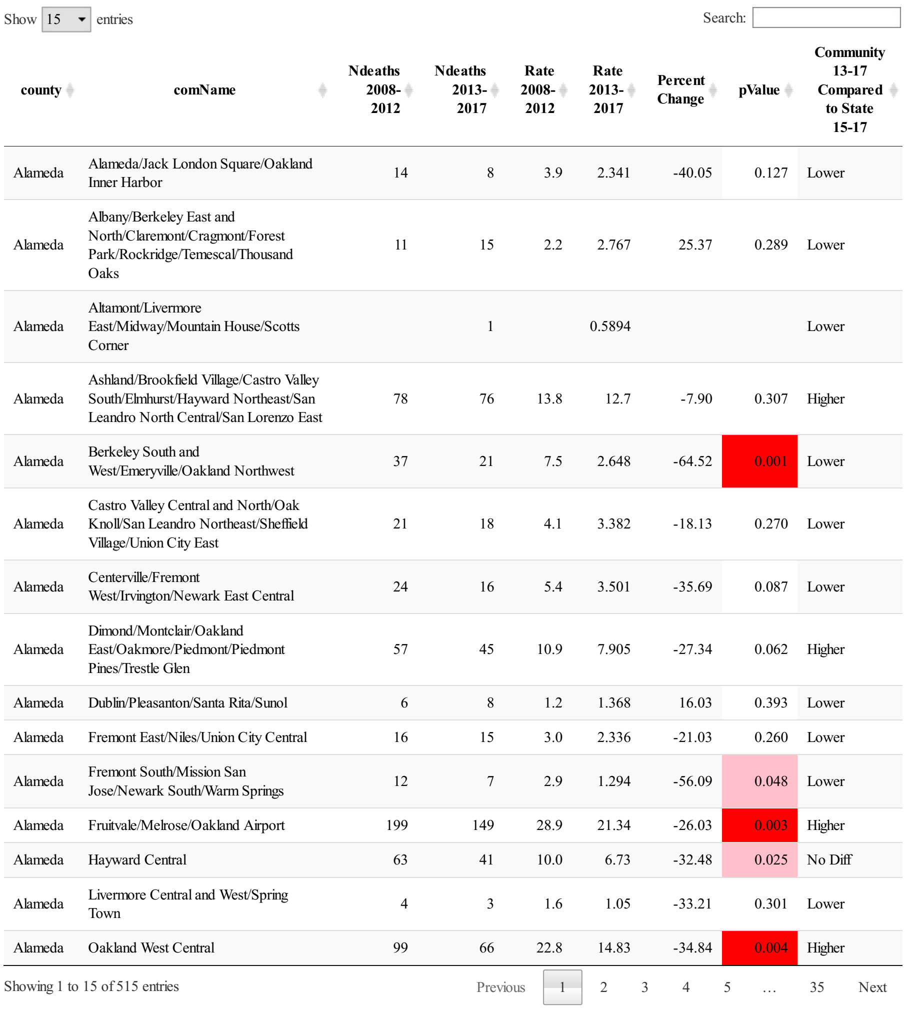
county	Ndeaths 2000-2002	Ndeaths 2003-2005	Ndeaths 2006-2008	Ndeaths 2009-2011	Ndeaths 2012-2014	Ndeaths 2015-2017	Rate 2000-2002	Rate 2003-2005	Rate 2006-2008	Rate 2009-2011	Rate 2012-2014	Rate 2015-2017	Percent Change	pValue	County to State 2015-2017	low06_08	up06_08	low15_17	up15_17
Alameda	351	349	355	418	439	442	8.3	8.0	7.9	8.9	8.8	8.5	8.15	0.137	Lower	7.1	8.7	7.7	9.3
Alpine	1	2	1				25.9	58.6	57.4							1.5	320.0		
Amador	17	23	26	34	38	25	15.5	19.1	18.3	25.0	27.6	20.5	11.95	0.355	Higher	11.6	28.6	12.7	32.4
Butte	102	109	117	134	107	128	16.3	16.9	18.0	19.4	15.6	18.3	1.50	0.456	Higher	14.8	21.8	15.1	22.1
Calaveras	19	30	24	37	31	40	13.7	21.8	15.3	23.1	20.0	25.9	69.31	0.035	Higher	9.3	24.6	17.5	37.9
CALIFORNIA	9,579	9,881	10,410	11,480	11,870	12,560	9.6	9.5	9.6	10.1	10.1	10.3	7.20	0.000	No Diff	9.4	9.8	10.1	10.4
Colusa	9	1	8	9	16	6	17.0	1.6	13.9	15.2	26.6	9.5	-31.95	0.241	No Diff	6.0	28.0	3.4	21.7
Contra Costa	255	289	295	353	318	356	8.9	9.7	9.4	10.7	9.3	10.1	7.13	0.194	No Diff	8.4	10.6	9.1	11.3
Del Norte	19	14	8	20	20	10	22.4	15.5	8.8	22.7	22.7	10.2	16.36	0.378	No Diff	3.8	18.1	4.7	20.4
El Dorado	66	76	65	113	92	98	13.9	13.9	12.0	18.8	14.8	17.4	44.39	0.014	Higher	9.2	15.6	13.9	21.6
Fresno	191	228	248	218	273	303	8.5	9.5	9.8	8.2	10.2	10.8	9.75	0.141	No Diff	8.6	11.2	9.6	12.1
Glenn	19	11	10	8	7	26	24.8	13.5	12.4	9.4	8.0	28.3	128.31	0.011	Higher	5.9	23.3	18.3	42.6
Humboldt	79	80	87	94	105	92	20.1	19.4	20.6	21.9	24.7	22.5	9.28	0.282	Higher	16.4	25.6	18.0	27.9
Imperial	26	30	30	36	36	48	6.4	7.2	6.7	7.2	6.8	9.0	35.30	0.097	No Diff	4.5	9.7	6.6	12.1
Inyo	13	13	5	13	12	12	18.9	20.1	8.5	18.2	16.2	15.7	84.42	0.137	No Diff	2.5	22.4	7.3	31.7

Showing 1 to 15 of 59 entries

- summary of county suicide rates compared to state rate

```
## # A tibble: 2 x 4
##   Higher Lower `No Diff` total
##    <dbl> <dbl>     <dbl> <dbl>
## 1   27    5           26    58
## 2   46.6  8.62        44.8 100
```

HOMICIDES - Community Level



Show 15 entries

Search:

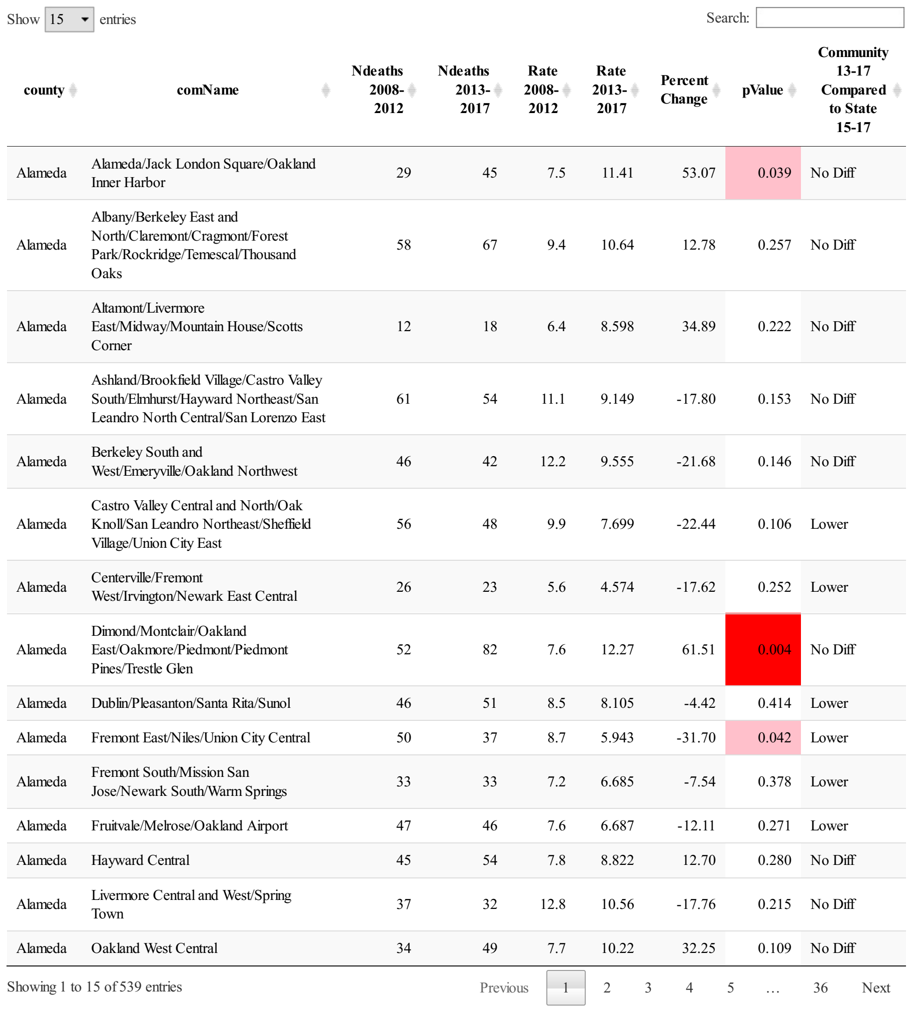
county	comName	Ndeaths 2008-2012	Ndeaths 2013-2017	Rate 2008-2012	Rate 2013-2017	Percent Change	pValue	Community 13-17 Compared to State 15-17
Alameda	Alameda/Jack London Square/Oakland Inner Harbor	14	8	3.9	2.341	-40.05	0.127	Lower
Alameda	Albany/Berkeley East and North/Claremont/Cragmont/Forest Park/Rockridge/Temescal/Thousand Oaks	11	15	2.2	2.767	25.37	0.289	Lower
Alameda	Altamont/Livermore East/Midway/Mountain House/Scotts Corner		1		0.5894			Lower
Alameda	Ashland/Brookfield Village/Castro Valley South/Elmhurst/Hayward Northeast/San Leandro North Central/San Lorenzo East	78	76	13.8	12.7	-7.90	0.307	Higher
Alameda	Berkeley South and West/Emeryville/Oakland Northwest	37	21	7.5	2.648	-64.52	0.001	Lower
Alameda	Castro Valley Central and North/Oak Knoll/San Leandro Northeast/Sheffield Village/Union City East	21	18	4.1	3.382	-18.13	0.270	Lower
Alameda	Centerville/Fremont West/Irvington/Newark East Central	24	16	5.4	3.501	-35.69	0.087	Lower
Alameda	Dimond/Montclair/Oakland East/Oakmore/Piedmont/Piedmont Pines/Trestle Glen	57	45	10.9	7.905	-27.34	0.062	Higher
Alameda	Dublin/Pleasanton/Santa Rita/Sunol	6	8	1.2	1.368	16.03	0.393	Lower
Alameda	Fremont East/Niles/Union City Central	16	15	3.0	2.336	-21.03	0.260	Lower
Alameda	Fremont South/Mission San Jose/Newark South/Warm Springs	12	7	2.9	1.294	-56.09	0.048	Lower
Alameda	Fruitvale/Melrose/Oakland Airport	199	149	28.9	21.34	-26.03	0.003	Higher
Alameda	Hayward Central	63	41	10.0	6.73	-32.48	0.025	No Diff
Alameda	Livermore Central and West/Spring Town	4	3	1.6	1.05	-33.21	0.301	Lower
Alameda	Oakland West Central	99	66	22.8	14.83	-34.84	0.004	Higher

Showing 1 to 15 of 515 entries

Previous 1 2 3 4 5 … 35 Next

```
## # A tibble: 2 x 4
##   Higher Lower `No Diff` total
##    <dbl> <dbl>     <dbl> <dbl>
## 1   73    209       209    491
## 2   14.9   42.6      42.6   100
```

SUICIDES - Community Level

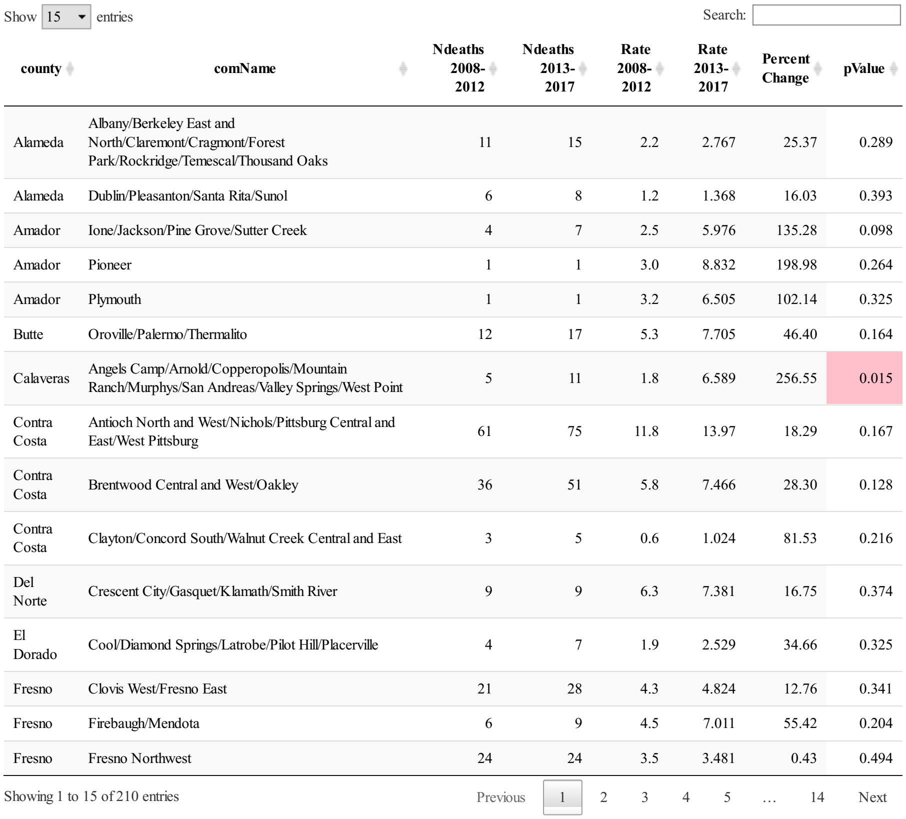


county	comName	Ndeaths 2008-2012	Ndeaths 2013-2017	Rate 2008-2012	Rate 2013-2017	Percent Change	pValue	Community 13-17 Compared to State 15-17
Alameda	Alameda/Jack London Square/Oakland Inner Harbor	29	45	7.5	11.41	53.07	0.039	No Diff
Alameda	Albany/Berkeley East and North/Claremont/Cragmont/Forest Park/Rockridge/Temescal/Thousand Oaks	58	67	9.4	10.64	12.78	0.257	No Diff
Alameda	Altamont/Livermore East/Midway/Mountain House/Scotts Corner	12	18	6.4	8.598	34.89	0.222	No Diff
Alameda	Ashland/Brookfield Village/Castro Valley South/Elmhurst/Hayward Northeast/San Leandro North Central/San Lorenzo East	61	54	11.1	9.149	-17.80	0.153	No Diff
Alameda	Berkeley South and West/Emeryville/Oakland Northwest	46	42	12.2	9.555	-21.68	0.146	No Diff
Alameda	Castro Valley Central and North/Oak Knoll/San Leandro Northeast/Sheffield Village/Union City East	56	48	9.9	7.699	-22.44	0.106	Lower
Alameda	Centerville/Fremont West/Irvington/Newark East Central	26	23	5.6	4.574	-17.62	0.252	Lower
Alameda	Dimond/Montclair/Oakland East/Oakmore/Piedmont/Piedmont Pines/Trestle Glen	52	82	7.6	12.27	61.51	0.004	No Diff
Alameda	Dublin/Pleasanton/Santa Rita/Sunol	46	51	8.5	8.105	-4.42	0.414	Lower
Alameda	Fremont East/Niles/Union City Central	50	37	8.7	5.943	-31.70	0.042	Lower
Alameda	Fremont South/Mission San Jose/Newark South/Warm Springs	33	33	7.2	6.685	-7.54	0.378	Lower
Alameda	Fruitvale/Melrose/Oakland Airport	47	46	7.6	6.687	-12.11	0.271	Lower
Alameda	Hayward Central	45	54	7.8	8.822	12.70	0.280	No Diff
Alameda	Livermore Central and West/Spring Town	37	32	12.8	10.56	-17.76	0.215	No Diff
Alameda	Oakland West Central	34	49	7.7	10.22	32.25	0.109	No Diff

Showing 1 to 15 of 539 entries

```
## # A tibble: 2 x 4
##   Higher Lower `No Diff` total
##    <dbl> <dbl>     <dbl> <dbl>
## 1  101    148       282    531
## 2   19.0   27.9      53.1   100
```

HOMICIDES – INCREASES ONLY



Show 15 entries

Search:

county	comName	Ndeaths 2008-2012	Ndeaths 2013-2017	Rate 2008-2012	Rate 2013-2017	Percent Change	pValue
Alameda	Albany/Berkeley East and North/Claremont/Cragmont/Forest Park/Rockridge/Temescal/Thousand Oaks	11	15	2.2	2.767	25.37	0.289
Alameda	Dublin/Pleasanton/Santa Rita/Sunol	6	8	1.2	1.368	16.03	0.393
Amador	Ione/Jackson/Pine Grove/Sutter Creek	4	7	2.5	5.976	135.28	0.098
Amador	Pioneer	1	1	3.0	8.832	198.98	0.264
Amador	Plymouth	1	1	3.2	6.505	102.14	0.325
Butte	Oroville/Palermo/Thermalito	12	17	5.3	7.705	46.40	0.164
Calaveras	Angels Camp/Arnold/Copperopolis/Mountain Ranch/Murphys/San Andreas/Valley Springs/West Point	5	11	1.8	6.589	256.55	0.015
Contra Costa	Antioch North and West/Nichols/Pittsburg Central and East/West Pittsburg	61	75	11.8	13.97	18.29	0.167
Contra Costa	Brentwood Central and West/Oakley	36	51	5.8	7.466	28.30	0.128
Contra Costa	Clayton/Concord South/Walnut Creek Central and East	3	5	0.6	1.024	81.53	0.216
Del Norte	Crescent City/Gasquet/Klamath/Smith River	9	9	6.3	7.381	16.75	0.374
El Dorado	Cool/Diamond Springs/Latrobe/Pilot Hill/Placerville	4	7	1.9	2.529	34.66	0.325
Fresno	Clovis West/Fresno East	21	28	4.3	4.824	12.76	0.341
Fresno	Firebaugh/Mendota	6	9	4.5	7.011	55.42	0.204
Fresno	Fresno Northwest	24	24	3.5	3.481	0.43	0.494

Showing 1 to 15 of 210 entries

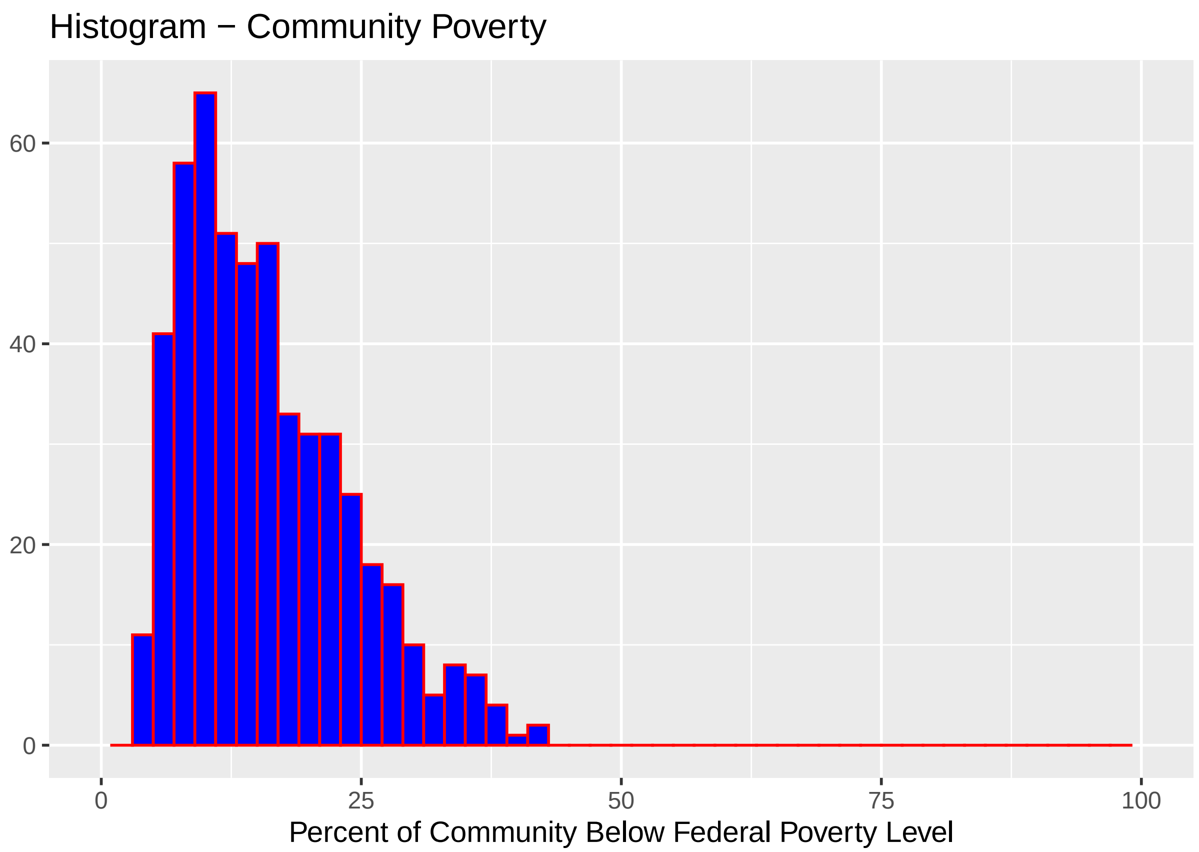
Previous 1 2 3 4 5 … 14 Next

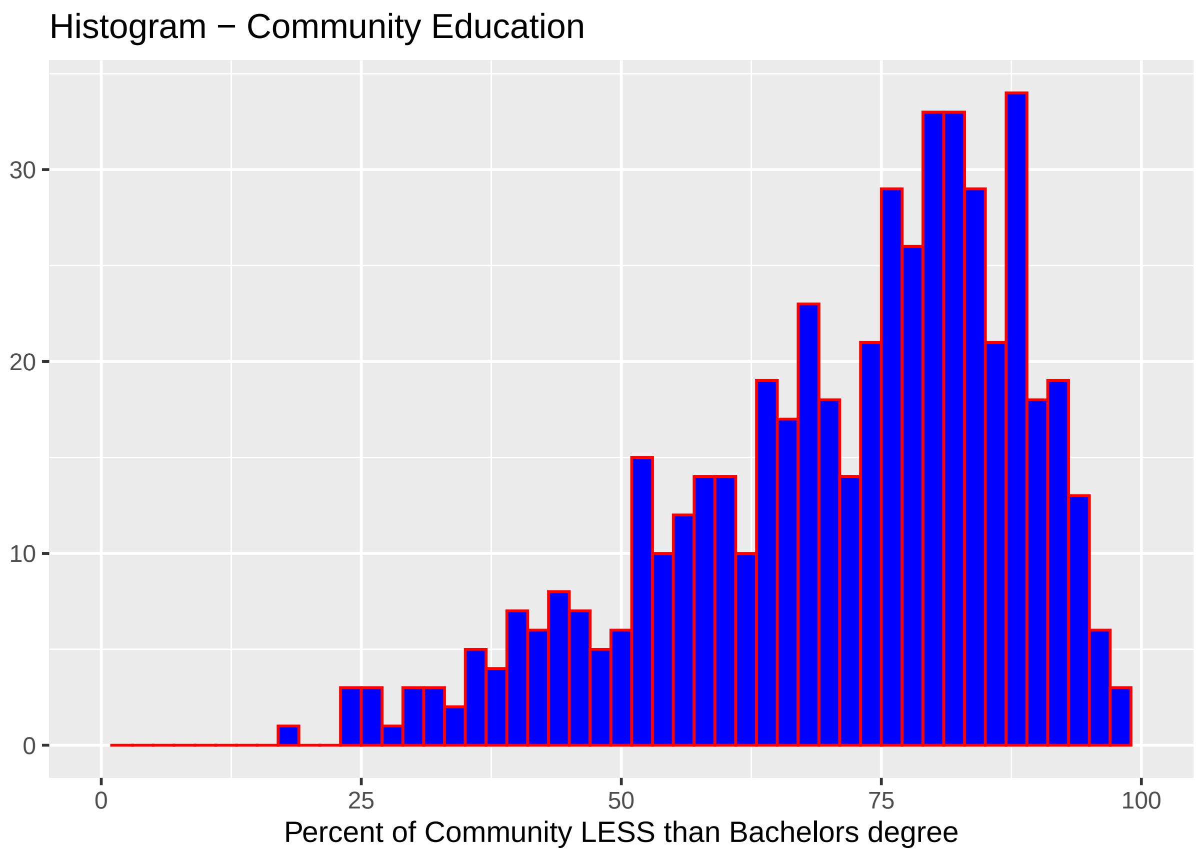
SDOH Work

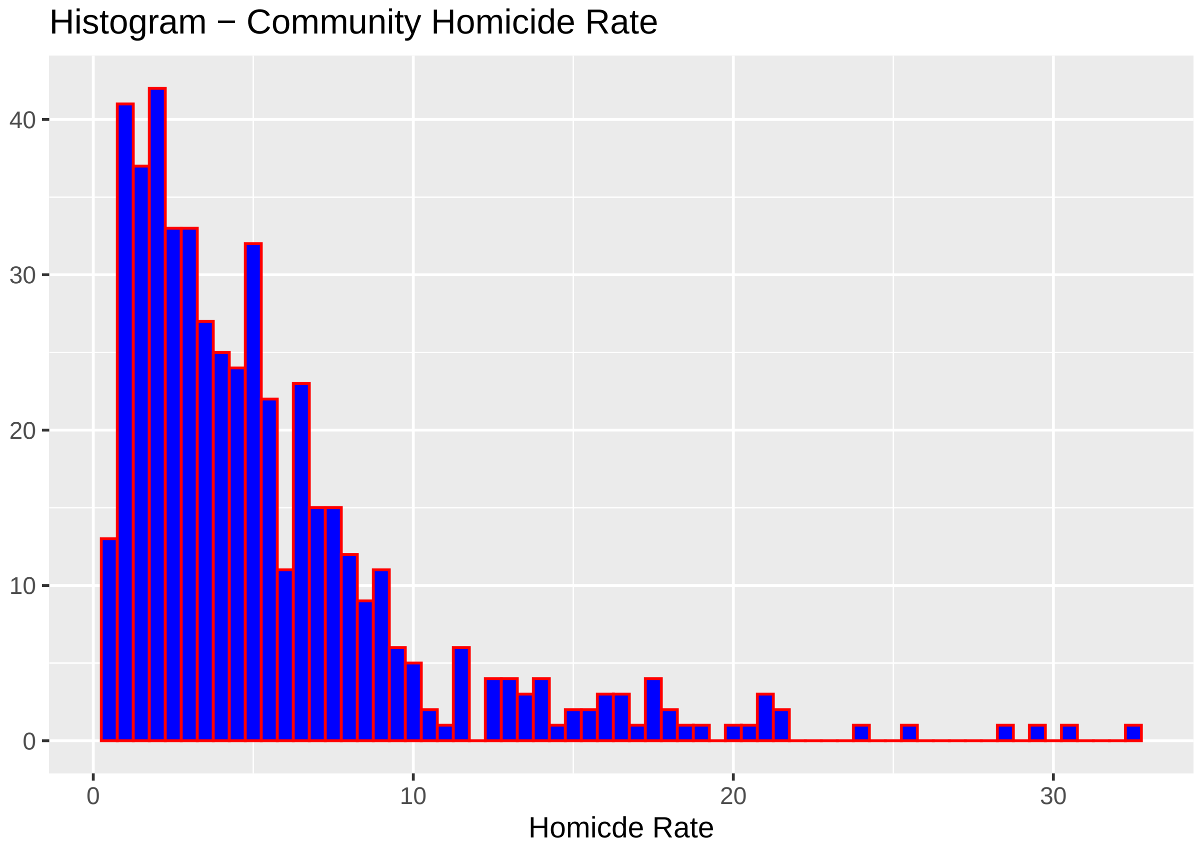
quick “exploration” of distributions of the three (plus) varibles we are “correlating”

histograms to look at the distribution of each

- community poverty and education from 2017 5-year ACS data, so covers 2013-2017; education is for population 25 and older
- community homicide is age-adjusted rate for 2013-2017 data combined, 39 (of 561) communities missing data, mostly do to cell suppression


Histogram − Community Poverty
60
40
20
0
0
25
50
75
100
Percent of Community Below Federal Poverty Level


Histogram − Community Education
30
20
10
0
0
25
50
75
100
Percent of Community LESS than Bachelors degree

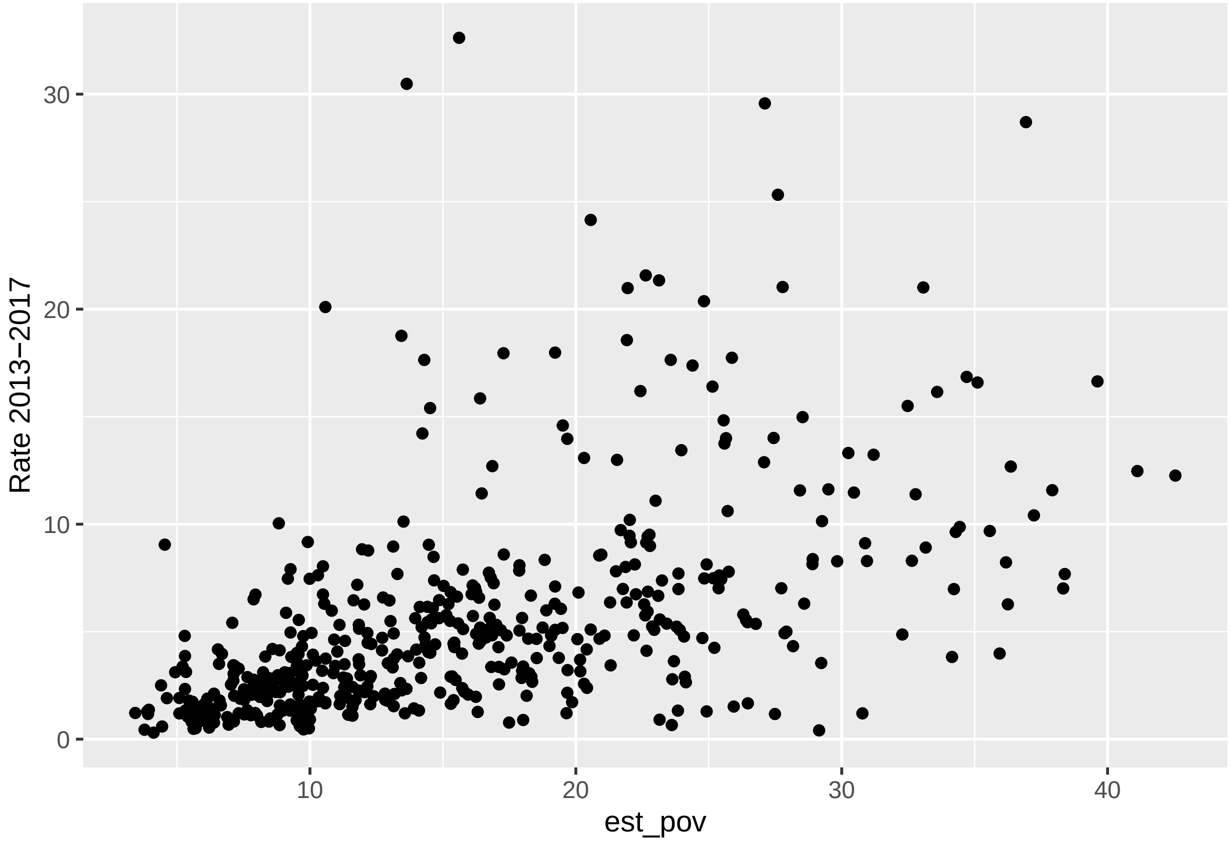


observations:

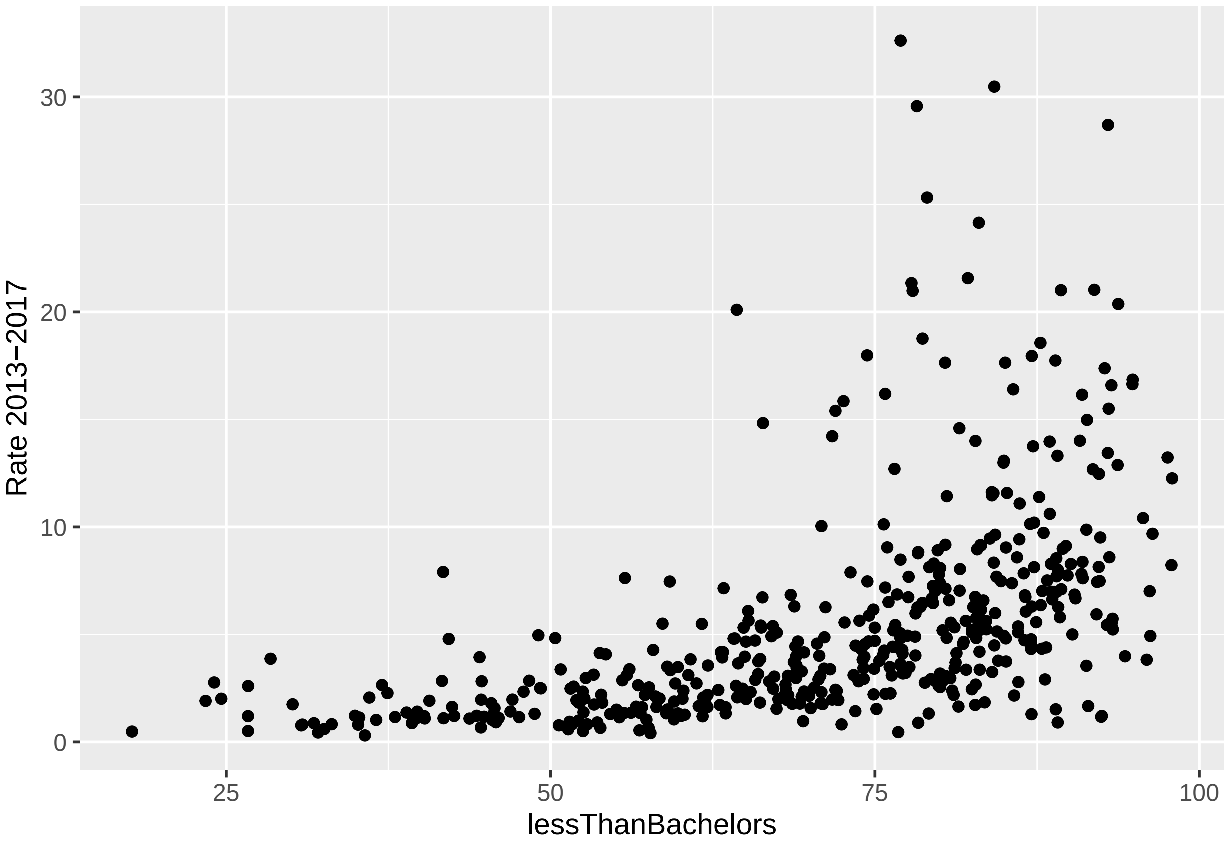
- poverty - normal-ish, slight right skew (can’t be smaller than 0 or larger than 100)
- education - skewed left

- homicide - strong skew right

now looking at the “raw” associations

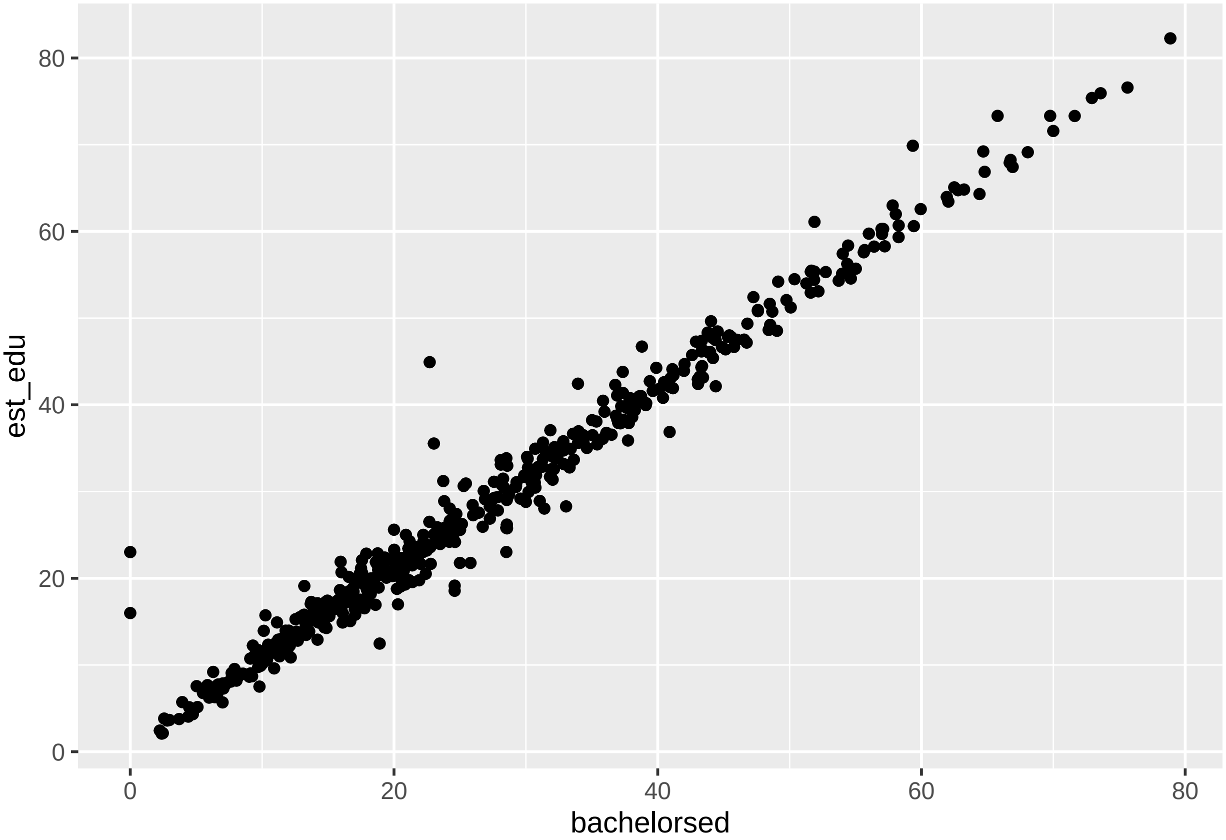


- appears to have strong linear association, but “spread” increasing with poverty (transform?)



- non-linear relationship - log-linear (i.e. exponential) explore transformation;
- explore difference in pattern between poverty and education with homicide

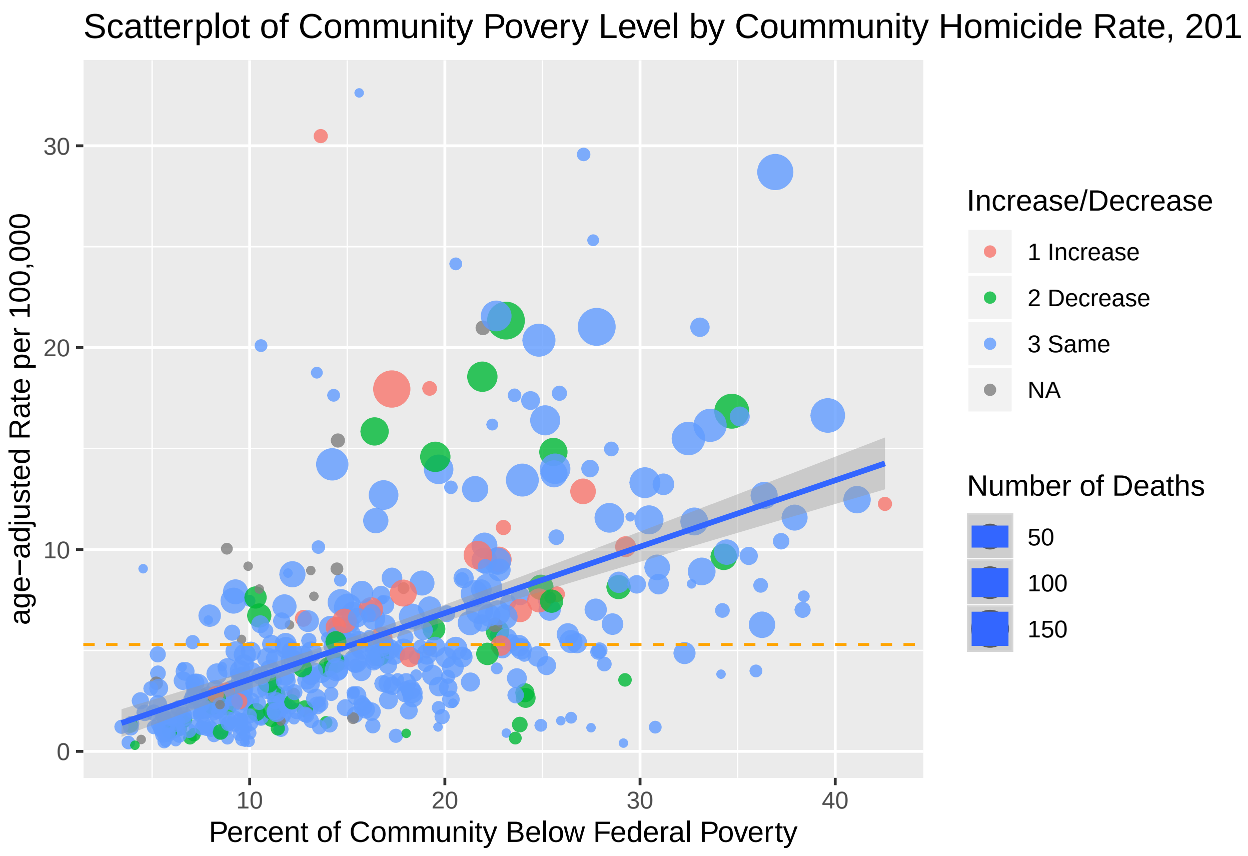
check that this is not a coding error with eduction by comapring "our" ACS data pull to HPI

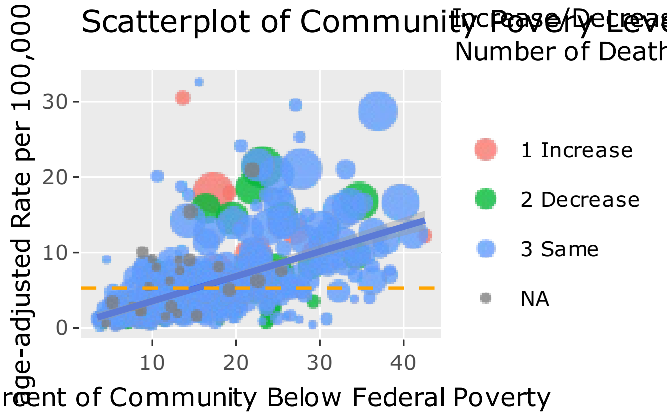


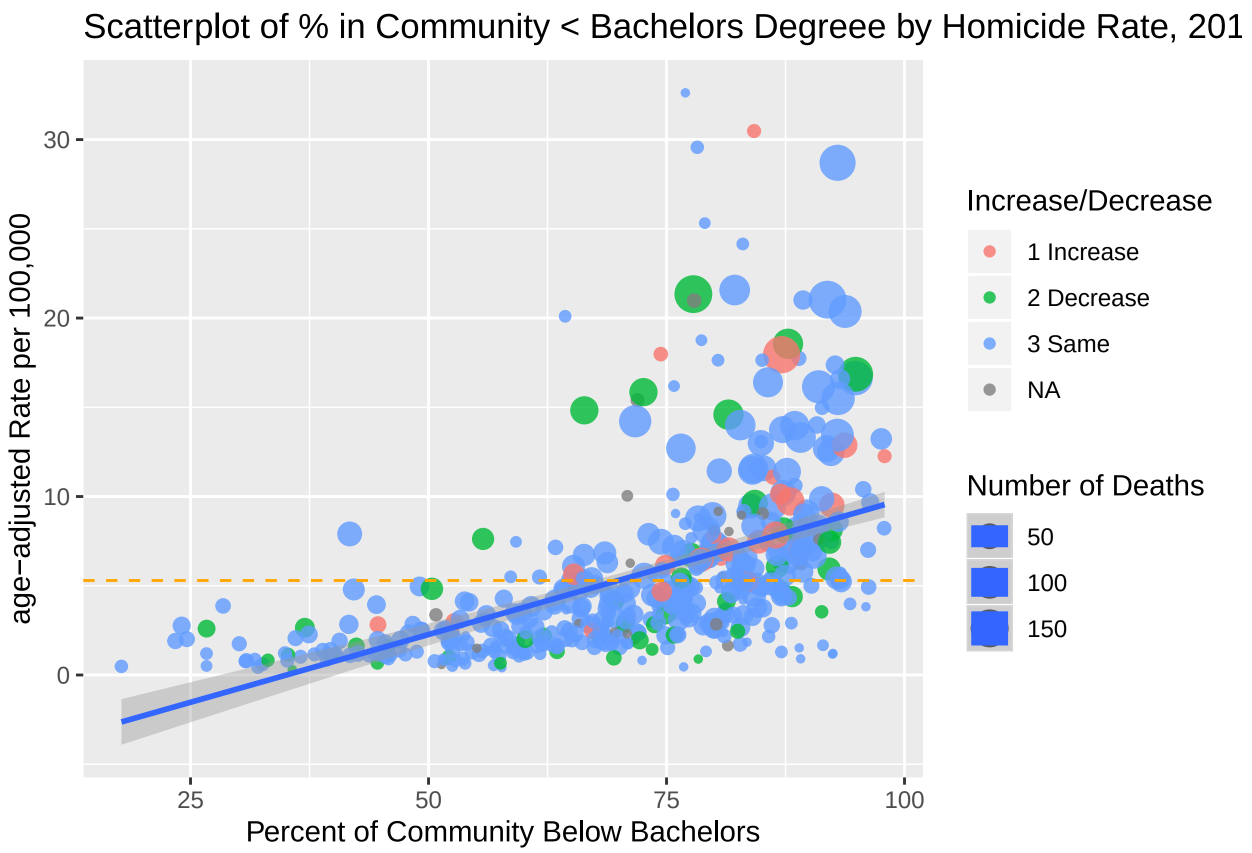
- not a coding error (lack of exact correlation is from different years of data)

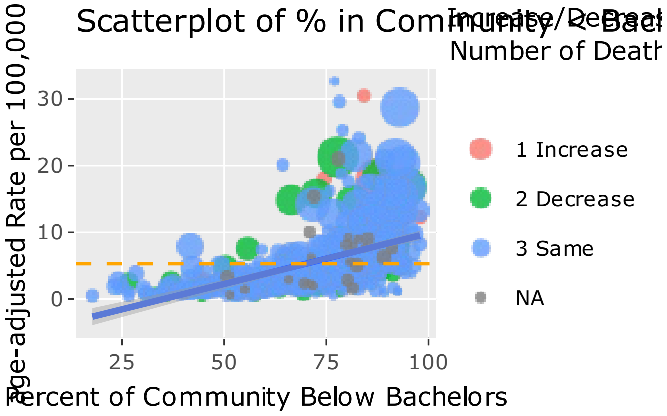
“added value” exploration with:

- linear modeling lines
- color based on CHANGES in homicide rates
- dot size based on number of homicides
- very messy pop-up to get county/community name


Scatterplot of Community Povery Level by Coummunity Homicide Rate, 201
age−adjusted Rate per 100,000
30
20
10
0
10
20
30
40
Percent of Community Below Federal Poverty
Increase/Decrease
1 Increase
2 Decrease
3 Same
NA
Number of Deaths
50
100
150


Scatterplot of Community Poverty Leve
Increase/Decrease
Number of Death
ge-adjusted Rate per 100,000
30
20
10
0
10
20
30
40
rcent of Community Below Federal Poverty
● 1 Increase
● 2 Decrease
● 3 Same
● NA


Scatterplot of % in Community < Bachelors Degreee by Homicide Rate, 201
age−adjusted Rate per 100,000
30
20
10
0
25
50
75
100
Percent of Community Below Bachelors
Increase/Decrease
1 Increase
2 Decrease
3 Same
NA
Number of Deaths
50
100
150


Scatterplot of % in Community < Bac
Increase/Decrea
Number of Death
Age-adjusted Rate per 100,000
30
20
10
0
25
50
75
100
Percent of Community Below Bachelors
● 1 Increase
● 2 Decrease
● 3 Same
● NA