



Pertussis Report

June 27, 2016

California experienced a pertussis epidemic in 2014. Pertussis is cyclical and peaks every 3-5 years. Young infants are at greatest risk of hospitalization and death from pertussis, therefore pregnant women are encouraged to receive pertussis vaccine (Tdap) during the 3rd trimester of every pregnancy. Pertussis antibodies are transferred from vaccinated mothers to their infants and will help protect them until they are old enough to be vaccinated. The primary DTaP vaccine series is essential for reducing severe disease in young infants and should not be delayed. DTaP can be given to infants at an accelerated schedule with the first dose given as early as 6 weeks of age. Even one dose of DTaP may offer some protection against severe pertussis disease and death in infants.

- **608 cases with onset in 2016** were reported to CDPH for a state rate of 1.6 cases per 100,000 population (Figures 2-3). Due to reporting delays, the number of cases occurring January through June 2016 is expected to increase.
 - One death has been reported in an infant that was younger than 3 months of age at the time of disease onset.
- **4,705 cases with onset in 2015** were reported to CDPH for a state rate of 12.3 cases per 100,000 population (Table 1, Figures 1-3).
 - 271 cases were hospitalized; 70 (26%) of these required intensive care
 - 179 (66%) of hospitalized patients were infants <4 months of age.
 - Two deaths were reported: one was an infant that was younger than 3 weeks of age at the time of disease onset and one was an elderly woman who died of complications from many underlying health problems and for whom pertussis may have been a contributing cause.
 - Overall pertussis rates were highest for infants <1 year of age and older children and adolescents and teens 14-17 years of age (Figure 4). Rates by race/ethnicity are highest for White and Hispanic infants <6 months of age and White, non-Hispanic adolescents and teens aged 10-17 years of age (Figure 5).
- **11,203 cases with onset in 2014** were reported to CDPH for a state rate of 29.3 cases per 100,000 population.
 - 456 cases were hospitalized; 119 (26%) of these required intensive care.
 - 278 (61%) of hospitalized patients were infants <4 months of age.
 - Three deaths with disease onset in 2014 were reported; all were infants who were ≤ 5 weeks old at time of disease onset.
 - Two additional deaths occurring in 2014 but with disease onset in 2013 were reported. These cases will be attributed to 2013. Both infants were ≤ 2 months of age at disease onset.
 - Additional data are available at:
<http://www.cdph.ca.gov/programs/immunize/Documents/VPD-DiseaseSummary2014.pdf>

Table 1. Pertussis cases and rate by year of onset and local health jurisdiction -- California 2015*

	All cases				Infants <4 months of age	
	Cases	Hospitalizations	Deaths	Rate†	Cases	Rate§
CALIFORNIA	4705	271	2	12.3	326	2.6
ALAMEDA	179	3		12.3	8	1.7
City of Berkeley‡	10	0		8.7	0	—
ALPINE	0	0		0.0	0	—
AMADOR	2	0		5.5	0	—
BUTTE	8	1		3.6	1	1.7
CALAVERAS	1	0		2.2	0	—
COLUSA	4	1		18.5	1	—
CONTRA COSTA	181	0		16.7	2	0.6
DEL NORTE	0	0		0.0	0	—
EL DORADO	27	1		14.7	1	2.6
FRESNO	57	5		5.9	11	2.7
GLENN	2	0		7.1	0	—
HUMBOLDT	56	4		41.5	3	8.3
IMPERIAL	10	3		5.6	4	5.3
INYO	0	0		0.0	0	—
KERN	145	11		16.7	16	4.4
KINGS	6	0		4.0	1	1.7
LAKE	6	1		9.3	0	—
LASSEN	0	0		0.0	0	—
LOS ANGELES	1140	101	1	12.1	97	3.0
City of Long Beach‡	38	5		8.2	5	—
City of Pasadena‡	8	0		5.7	0	—
MADERA	6	1		3.9	2	3.5
MARIN	53	1		20.7	1	1.8
MARIPOSA	0	0		0.0	0	—
MENDOCINO	9	0		10.1	0	—
MERCED	13	3		4.9	3	2.8
MODOC	0	7		0.0	0	—
MONO	0	0		0.0	0	—
MONTEREY	76	7		17.9	12	7.2
NAPA	49	1		35.2	4	10.7
NEVADA	3	0		3.1	0	—
ORANGE	162	25		5.2	17	1.8
PLACER	49	1		13.4	3	3.2
PLUMAS	2	1		10.4	1	—
RIVERSIDE	182	15		8.0	20	2.6
SACRAMENTO	288	3		19.9	6	1.2
SAN BENITO	7	0		12.2	0	—
SAN BERNARDINO	91	11		4.4	12	1.5
SAN DIEGO	892	25		28.0	46	4.2
SAN FRANCISCO	69	1		8.3	0	0.0
SAN JOAQUIN	81	3	1	11.5	6	2.3
SAN LUIS OBISPO	22	1		8.1	1	1.5
SAN MATEO	40	0		5.4	1	0.5
SANTA BARBARA	66	2		15.3	4	2.8
SANTA CLARA	149	4		8.0	7	1.2
SANTA CRUZ	79	0		29.1	1	1.3
SHASTA	15	0		8.4	0	0.0
SIERRA	0	0		0.0	0	—
SISKIYOU	6	1		13.3	0	—
SOLANO	42	6		9.9	3	2.3
SONOMA	34	2		6.9	1	0.7
STANISLAUS	38	4		7.2	8	4.1
SUTTER	2	0		2.1	0	0.0
TEHAMA	5	2		7.9	2	—
TRINITY	6	0		44.6	1	—
TULARE	87	6		19.1	11	5.4
TUOLUMNE	9	2		16.6	0	—
VENTURA	107	5		12.7	2	0.8
YOLO	83	0		40.3	0	0.0
YUBA	3	1		4.1	1	3.3

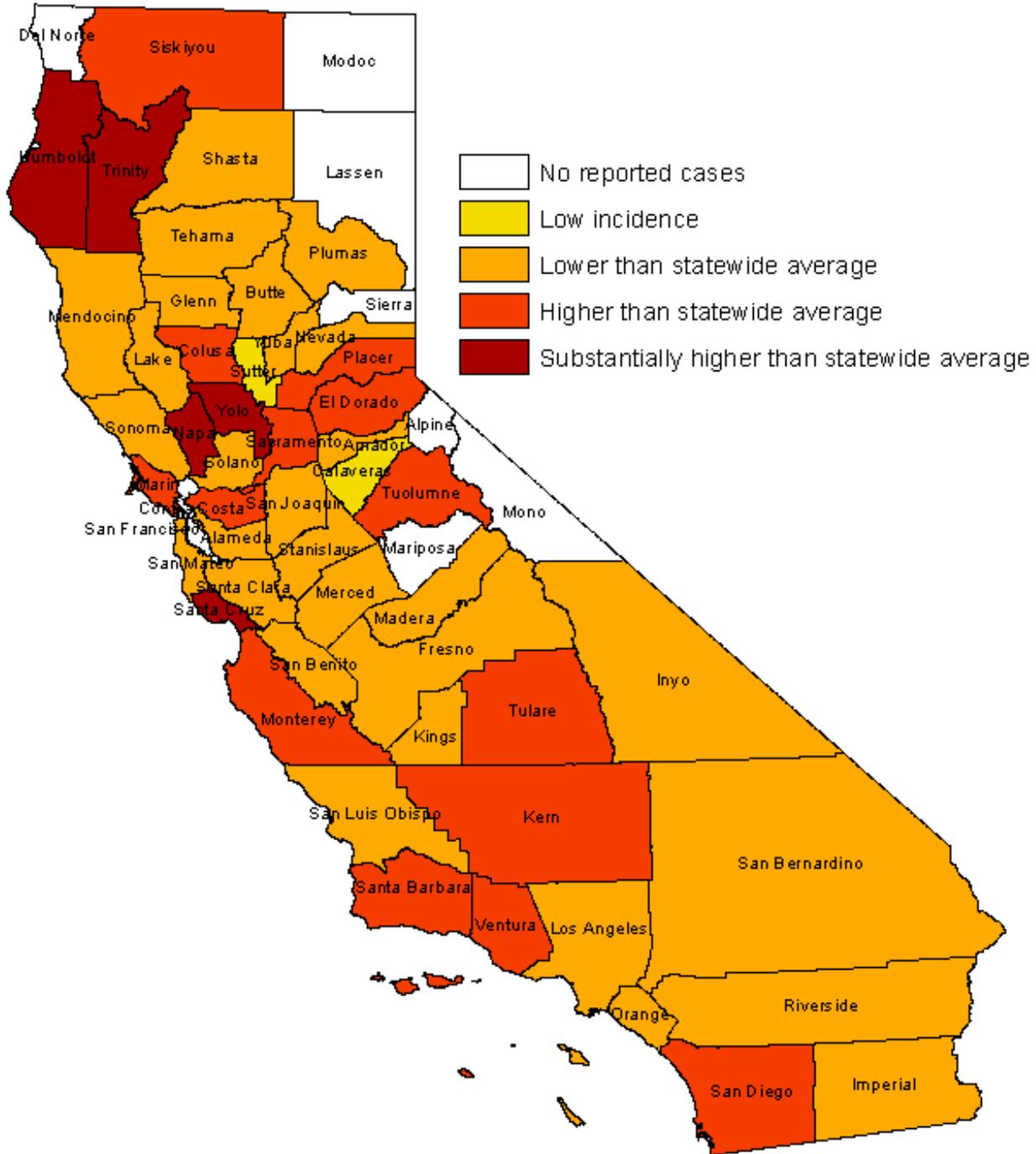
**Includes cases reported to CDPH as of 6/27/2016

†Case rate per 100,000 persons

§Case rate of infants <4 months of age per 1,000 births; denominator adjusted for partial birth cohort

‡City health jurisdictions included in county total for infant rates only

Figure 1. Pertussis incidence per 100,000 population, by county – California, 2015*



Corresponding category ranges: 0; 0.1-2.7; 2.8-12.2; 12.3-29.9; 30.0-45.0
 *Reported to CDPH as of 1/25/2016; data still provisional.

Figure 2. Number and incidence of reported pertussis cases by year of onset -- California, 1945-2016*

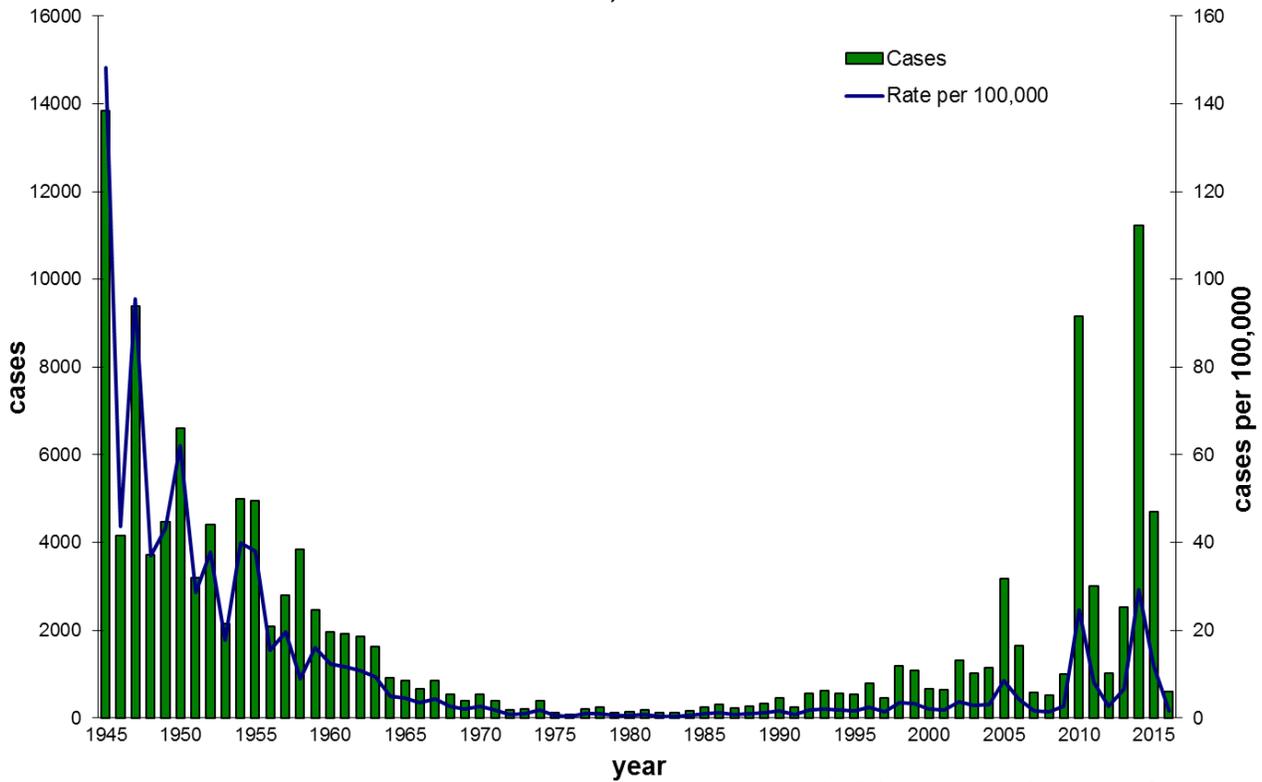


Figure 3. Pertussis cases by month of onset -- California, 2010-2016*

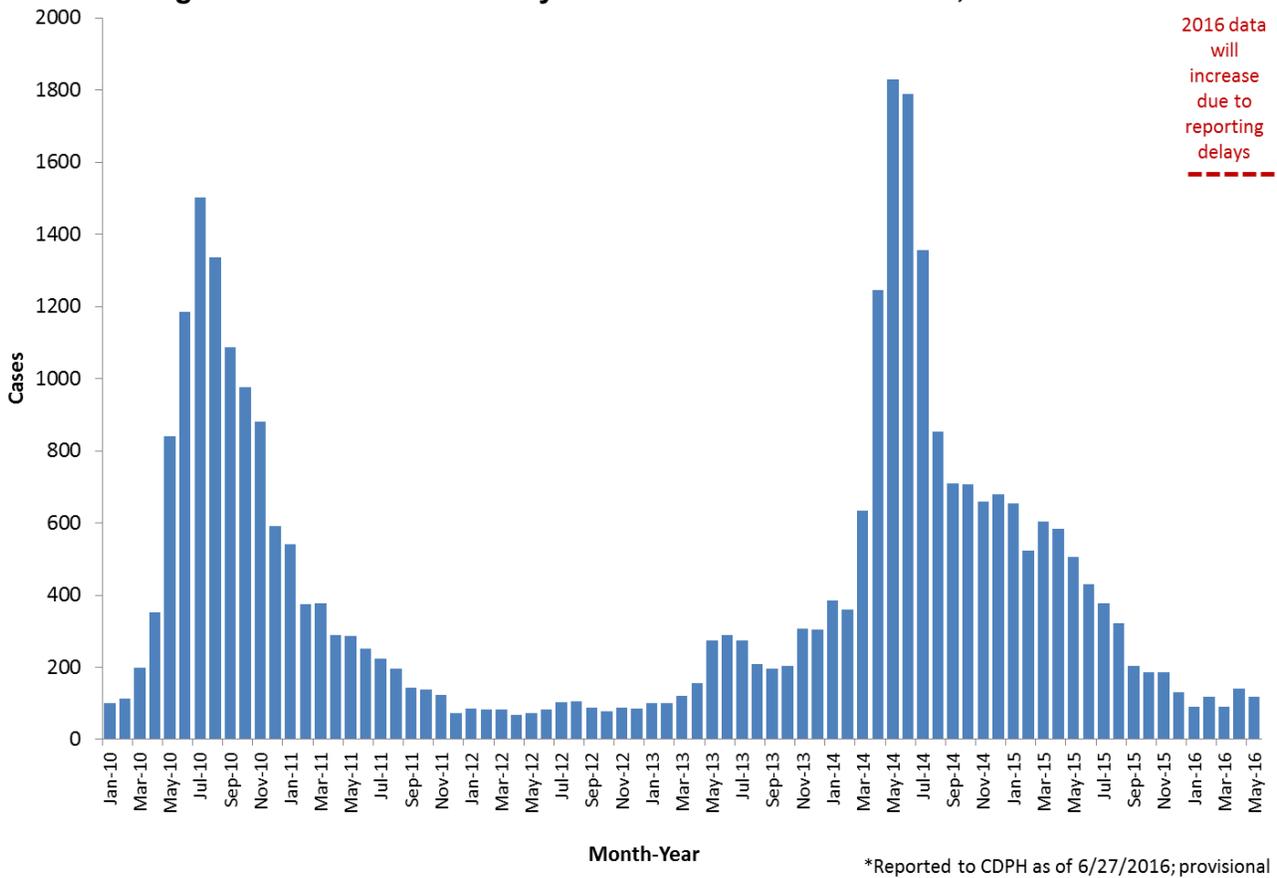
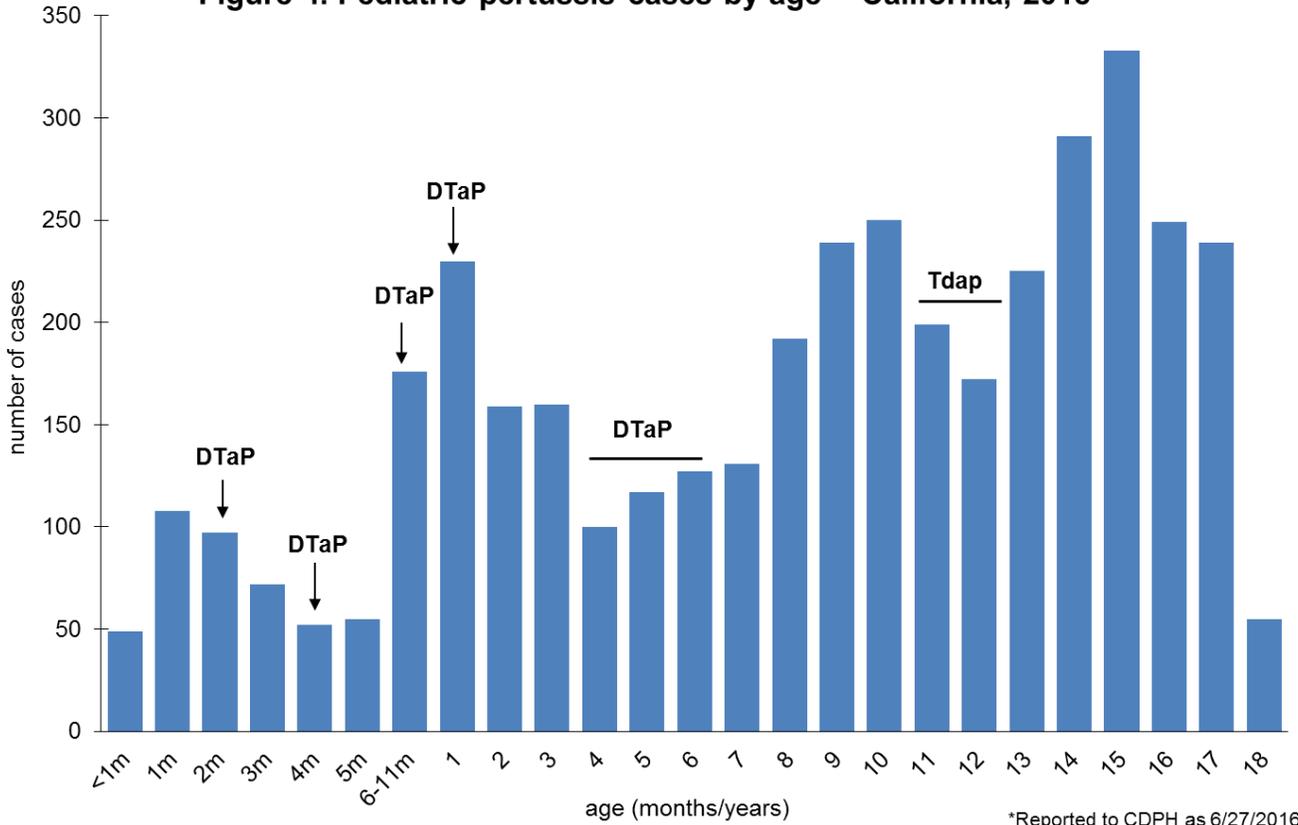
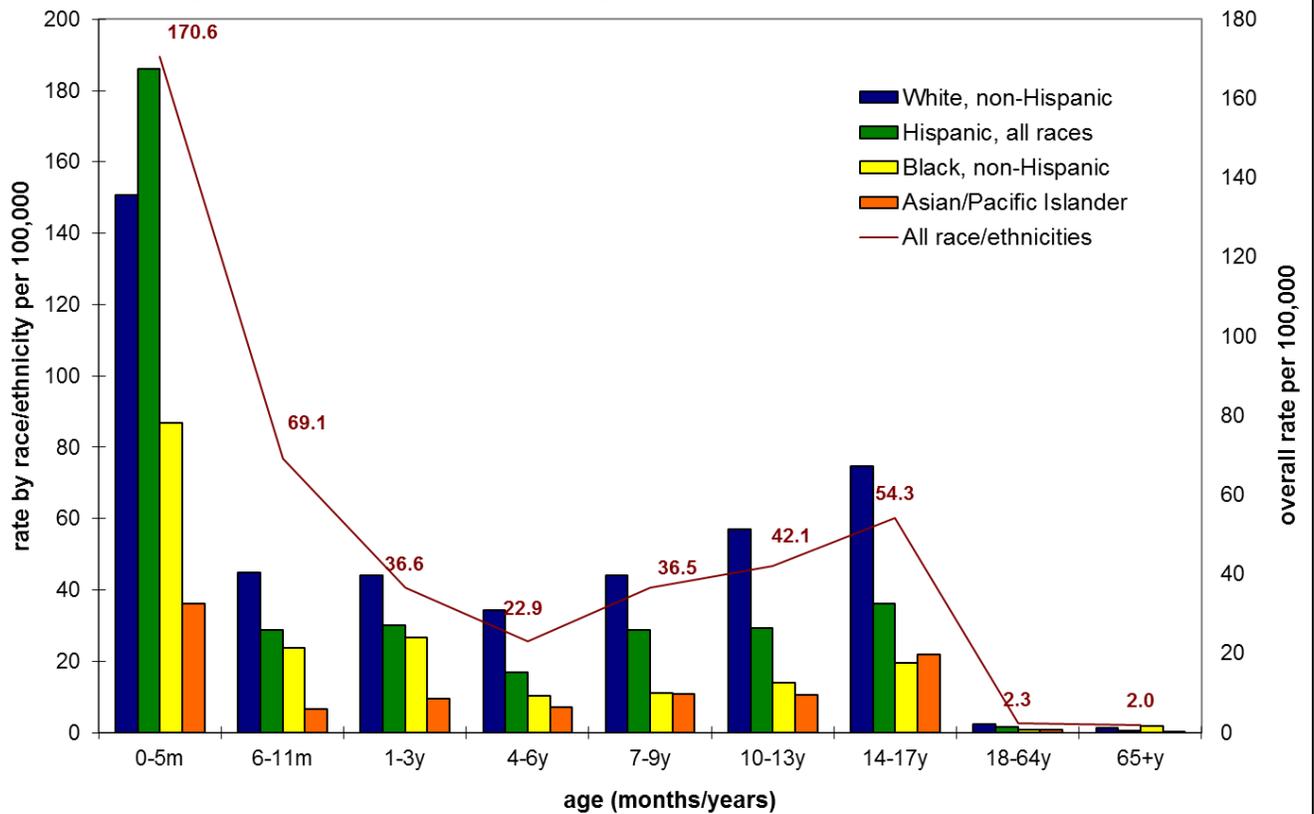


Figure 4. Pediatric pertussis cases by age -- California, 2015*



*Reported to CDPH as of 6/27/2016
 annotations in black indicated recommended vaccine doses

Figure 5. Pertussis rates by age and race/ethnicity -- California, 2015*



*Reported to CDPH as of 6/27/2016