

# 2013 Pertussis Report

El Paso County, Texas

**CITY OF EL PASO DEPARTMENT OF PUBLIC HEALTH**

August 7, 2014

## Credits

This 2013 Pertussis Report includes data available through the end of December 2013. This report is produced by the El Paso Department of Public Health – Epidemiology Program. We greatly appreciate the contribution made by health care providers, hospitals, and laboratories in reporting pertussis cases. The timely reporting of pertussis allows us to investigate cases so we can rapidly institute control measures to prevent and reduce the impact of the disease within our community. Their cooperation also permits the collection of data included in this report which is used for further prevention and planning efforts. We also wish to acknowledge the outstanding assistance from the Epidemiology Program staff, Sandra Goodwin for her role in disease investigation and intervention of pertussis cases.

### 2013 Pertussis Report Editor:

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[WWW.EPHEALTH.COM](http://WWW.EPHEALTH.COM)

## Reporting Requirements

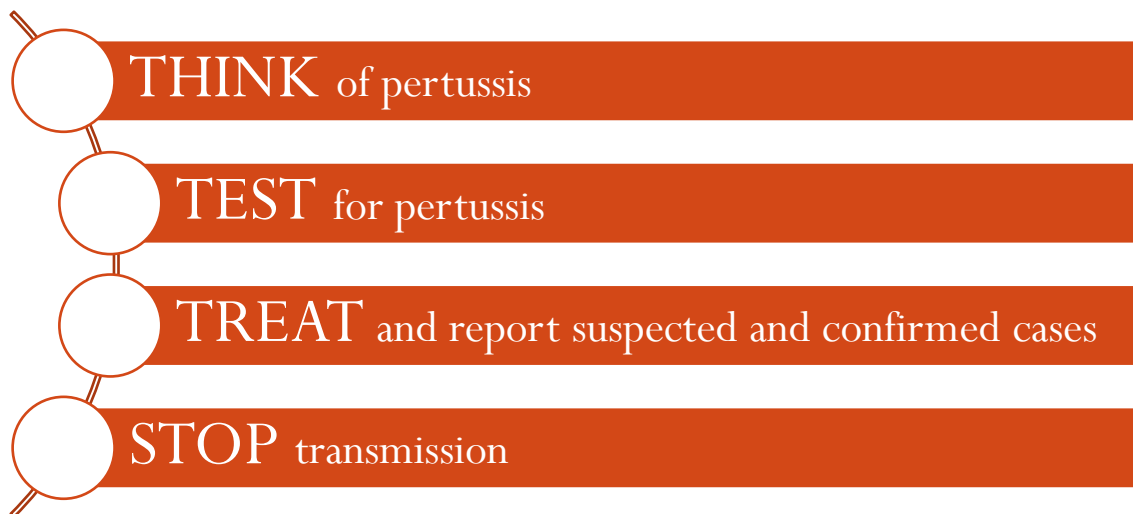
The City of El Paso Department of Public Health, under the legal authority of Chapter 97, Title 25, Texas Administrative Code, has designated certain diseases and conditions as notifiable. A list of these notifiable conditions can be found in our website <http://home.elpasotexas.gov/health/epidemiology.php>. A pertussis case is to be reported immediately to the health department upon diagnosis.

### Reporting

**El Paso health care providers, clinics, hospitals, laboratories, schools, and day care centers** are required to report all pertussis cases to the health department. Pertussis cases can be reported by:

- Calling the Epidemiology Program at (915) 212-6520, or
- Faxing the laboratory report to the Epidemiology Program at (915)212-0170 (secure fax), or
- Using our 24/7 Confidential Web-based Reporting System via <https://elpaso.phims.org/cmr/login.aspx>

If you have any questions or concerns about reporting please contact the Epidemiology Program at (915) 212-6520.



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# EXECUTIVE SUMMARY

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Despite a widespread childhood vaccination program, pertussis remains endemic in the United States. Pertussis is an infectious respiratory disease caused by the *Bordetella pertussis* bacterium. Pertussis affects unvaccinated individuals, and those in whom immunity has waned. Infants are at particular risk for severe disease and complications. Children, teenagers and adults present with a prolonged chronic cough illness.

Recent studies indicate that immunity from DTaP vaccine is high immediately following receipt of vaccine but wanes within a few years. Similarly, natural infection may also only protect for a few years. Therefore, physicians are advised to consider pertussis in patients with a compatible clinical presentation, regardless of age, vaccination status, or prior disease history.

The wide prevalence of pertussis and its changing epidemiology highlight the need for sensitive and rapid methods for diagnostic testing. Clinical diagnosis of pertussis is complicated because the characteristic cough (whoop) is rarely seen in children, teenagers, and adults. Instead the main feature of whooping cough for teens and adults is a persistent hacking cough.

Several diagnostic methods are available, but many lack sensitivity and/or require repeat testing or extended incubation times for test results. The reference method has traditionally been direct culture of the organism from nasopharyngeal secretions. However, due to the fastidious nature of the organism, the sensitivity of culture can vary greatly and is dependent on the stage of illness at the time of specimen collection, the technique used for specimen collection, specimen adequacy and transport, and culture conditions. Cultures may take 7 to 10 days to isolate and confirm *Bordetella pertussis*.

Polymerase Chain Reaction (PCR) is the recommended test for detection of *Bordetella pertussis* in patients having active, untreated pertussis. PCR is preferred over culture because it can provide timely results with improved sensitivity. PCR should be tested from nasopharyngeal specimens taken at 0-3 weeks following cough onset, but may provide accurate results for up to 4 weeks. After the fourth week of cough, the amount of bacterial DNA rapidly diminishes, which increases the risk of obtaining falsely-negative results.

The tests which are **not** recommended for confirming pertussis are Direct Fluorescent Antibody (DFA) and Serology (antibody and antigen testing). DFA is not considered reliable because of low sensitivity and variable specificity. Serology is not currently standardized in the U.S. and therefore is not considered reliable for laboratory confirmation if performed by a commercial laboratory.

Prevention of pertussis in infants < 6 months is the highest priority. Infants < 6 months are most likely to be hospitalized and infants <3 months are most likely to die from pertussis infection. The most important strategy to prevent infection in vulnerable infants is Tdap vaccination of pregnant women. All pregnant women should receive a dose of Tdap during each pregnancy, preferably in the third trimester, regardless of their vaccination history. Transplacentally transferred maternal antibodies may protect young infants against pertussis until they can be immunized. To maximize the maternal antibody response and passive antibody transfer to the infant, optimal timing for Tdap administration is between 27 and 36 weeks

gestation. There is also evidence that pertussis antibodies in breast milk are increased after immunization in pregnancy and breastfeeding may therefore help reduce the likelihood of a baby becoming ill with pertussis. If Tdap is not administered during the pregnancy, Tdap should be administered immediately postpartum.

Another strategy that can also protect the infant from pertussis is called “Cocooning”. This strategy encourages all close contacts to be up-to-date with pertussis vaccination (Tdap). Close contacts include father, grandparents, siblings, other relatives who may come in close contact with the infant, and other caregivers. For close contacts who are not up-to-date with Tdap vaccine, they should get vaccinated at least 2 weeks before coming into contact with the infant. Cocooning, in combination with maternal Tdap vaccination and administering the childhood DTaP series on schedule, provides the best protection to the infant.

# 2013 Pertussis Report

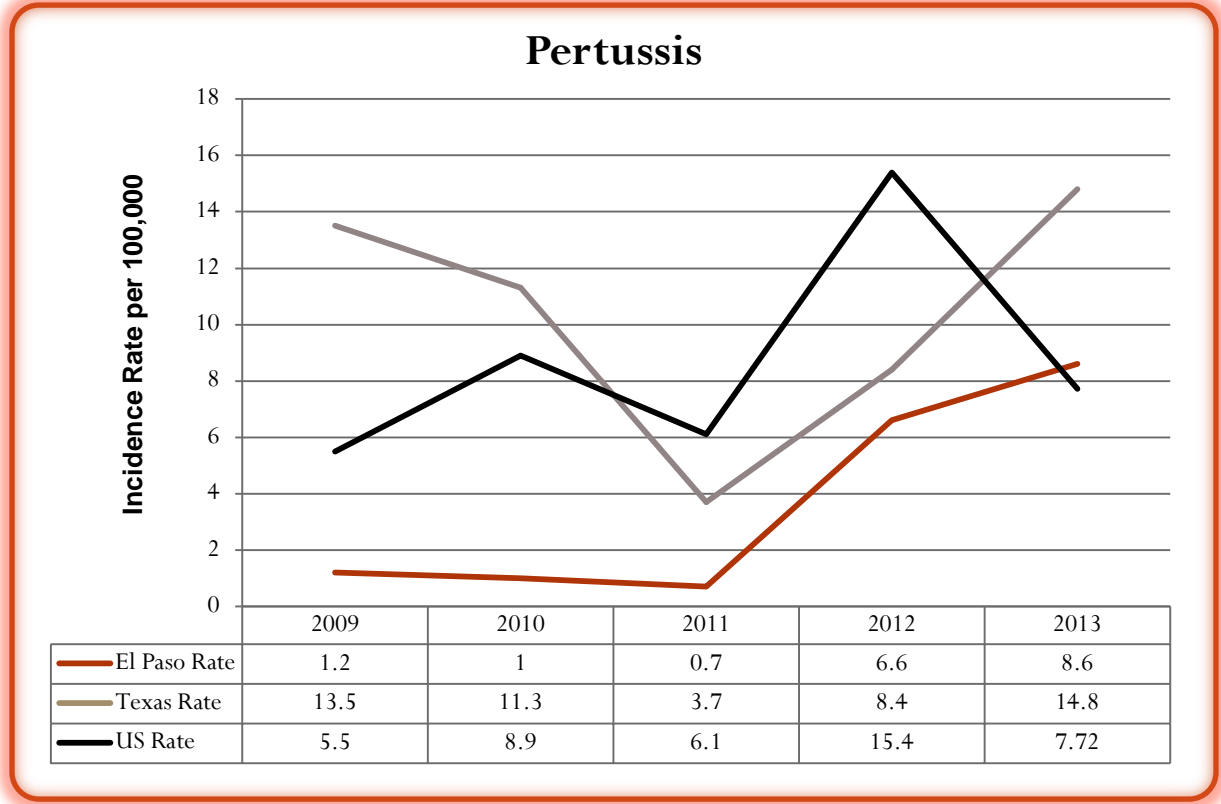
El Paso County, Texas

## Reported Cases: 2012 and 2013

Weeks 1-52, 2012: 55

Weeks 1-52, 2013: 73

### Pertussis 5 Year Historical Trend in El Paso County, Texas, and U.S.



Texas Population Projections for 2011-2013 and Estimated for 2009-2010

([www.dshs.state.tx.us/chs/popdat/downloads.shtm](http://www.dshs.state.tx.us/chs/popdat/downloads.shtm))

U.S. Population Estimated for 2009-2013 (U.S. Census Bureau, American Community Survey)



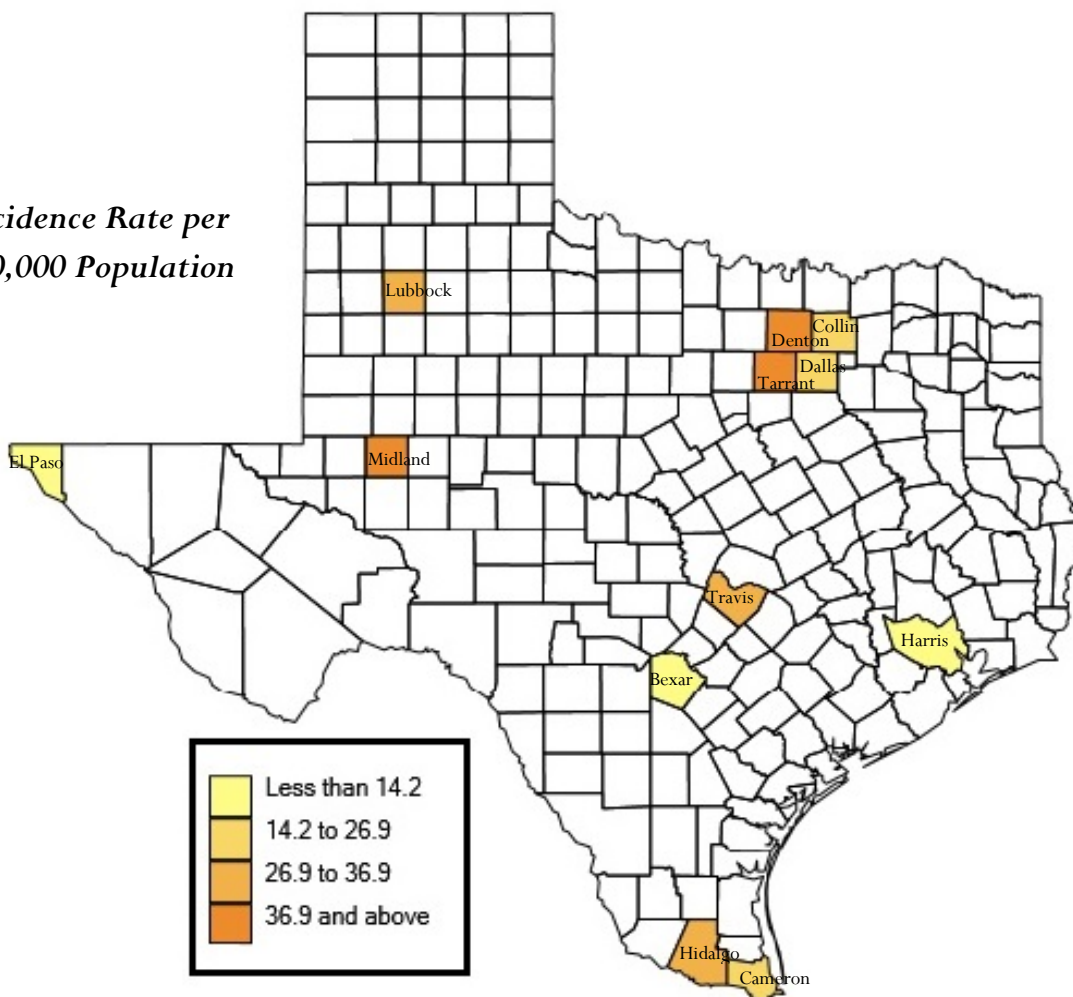
## Morbidity of Pertussis in El Paso County vs. Other Texas Counties

Top 12 Texas Counties with highest counts of pertussis cases for Year 2013

COUNTY	CASES	POPULATION*	INCIDENCE RATE PER 100,000
Tarrant	700	1,899,440	36.9
Dallas	406	2,442,673	16.6
Harris	361	4,317,916	8.3
Denton	320	738,412	43.3
Travis	311	1,095,143	28.4
Collin	204	880,765	23.2
Hidalgo	226	840,228	26.9
Bexar	115	1,815,272	6.3
Lubbock	96	288,800	33.2
Midland	73	143,405	50.9
El Paso	73	843,968	8.6
Cameron	61	430,967	14.2

\*Projected Texas population by County, 2013 ([www.dshs.state.tx.us/chs/popdat/ST2013.shtm](http://www.dshs.state.tx.us/chs/popdat/ST2013.shtm))

*Incidence Rate per  
100,000 Population*



## Reported Pertussis Deaths in El Paso County, Texas, and U.S., 2013

Age	El Paso	Texas	U.S.
Infants, aged < 3 months	0	5	9
Infants, aged 3-11 months	0	0	0
Children, aged 1-4 years	0	0	0
Adults, Aged 55+ years	0	0	0

### EL PASO TIDBITS

El Paso is located at the western tip of Texas, where Texas, New Mexico, and Mexico come together. El Paso hugs the Rio Grande and sits on the border of America's southern neighbor, Ciudad Juárez, Chihuahua, Mexico. The cultures and economies of these two cities are seamlessly linked, and together they form the largest international metroplex along the United States – Mexican border. El Paso is also home to the Tigua Indian Reservation and Fort Bliss, one of the largest military complexes of the United States Army. Public health monitoring and intervention in this unique geographic location is vital in preventing disease and the spread of it.

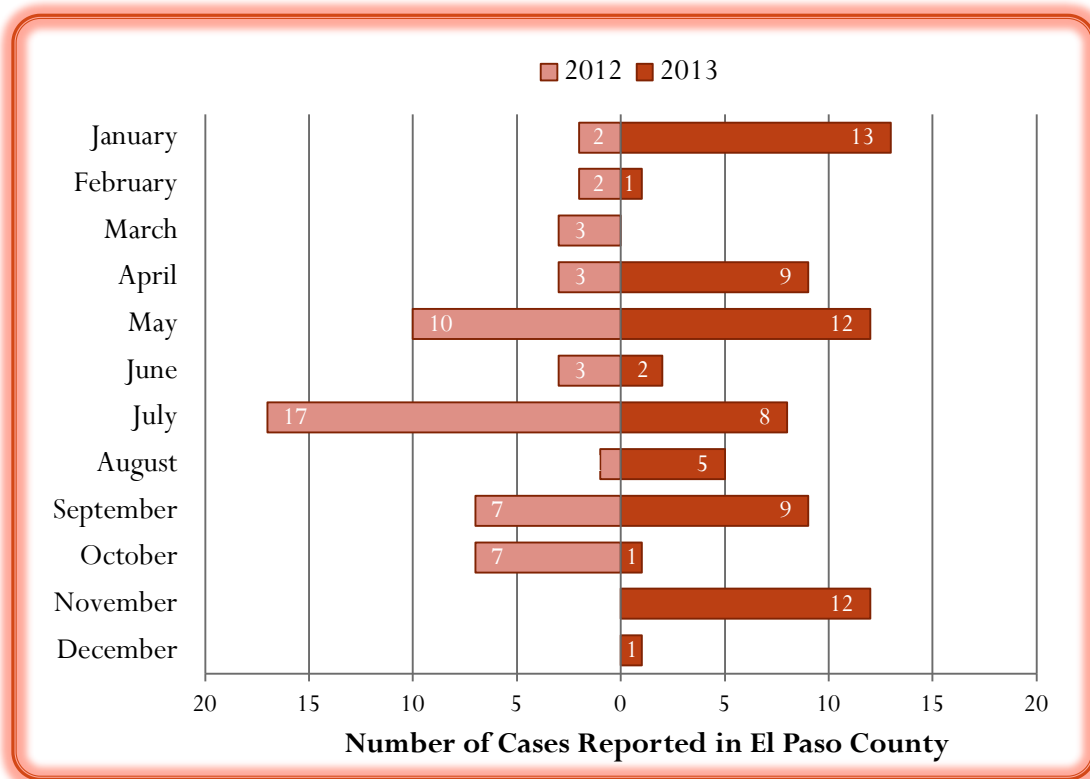


# EL PASO COUNTY TRENDS

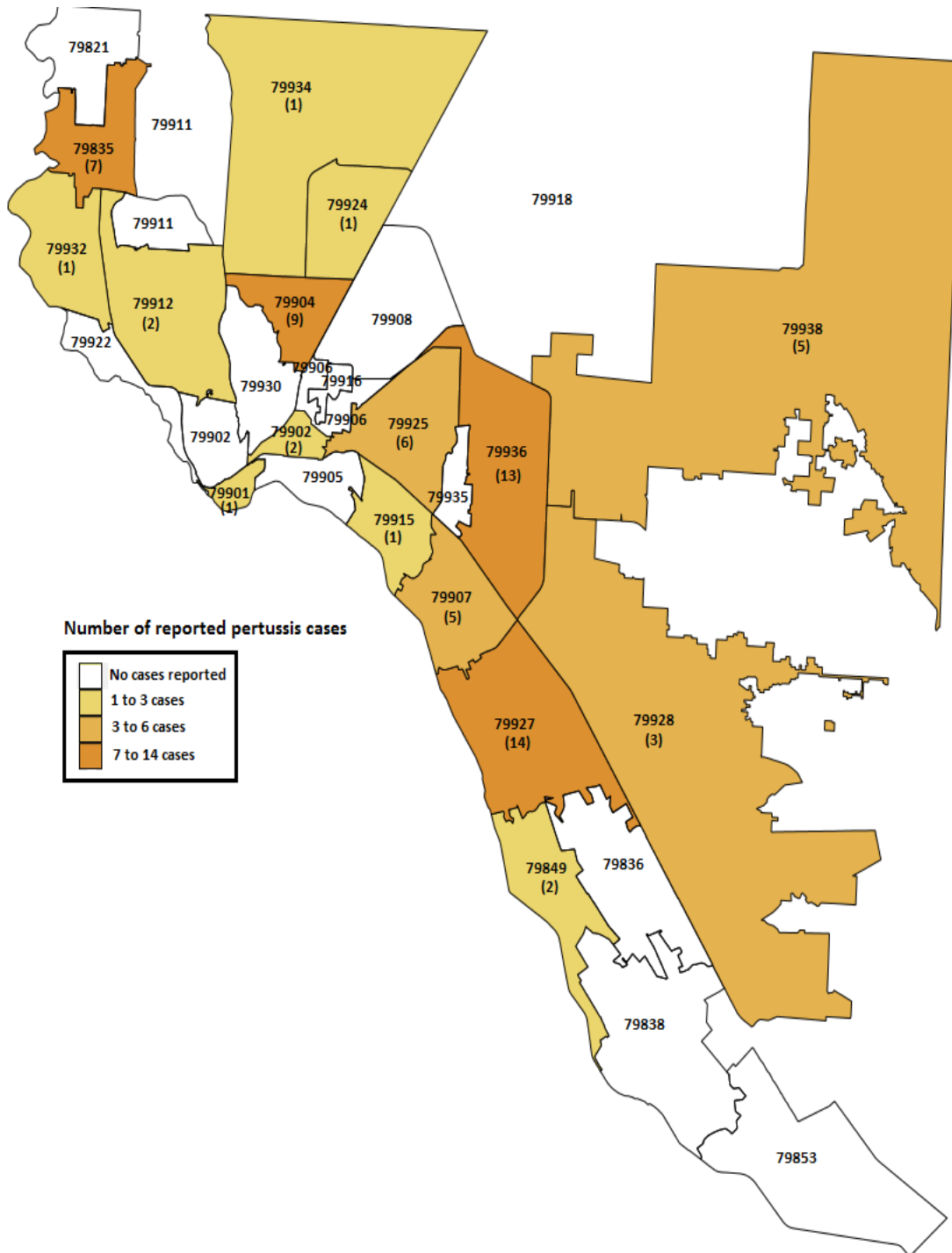
## Pertussis Quick Facts for Year 2013

- Cases reported: 73
- Incidence rate: 8.6 per 100,000 population
- Number of deaths: 0
- Percentage of cases hospitalized: 16.4%
- Hospitalization rate among infants < 1 year old: 74.5 per 100,000 live births

## Pertussis Cases by Month of Report, 2012 - 2013



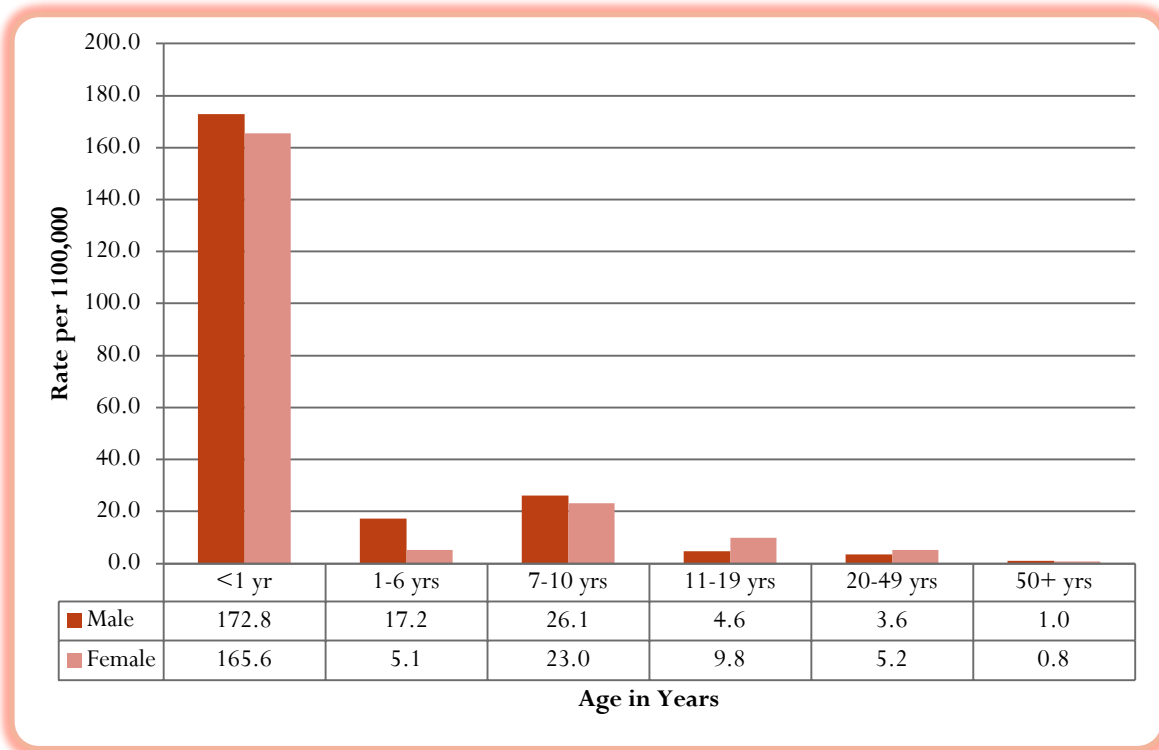
## Number of Reported Pertussis Cases in El Paso County, 2013



## Pertussis Case Profiles, By Age in El Paso County, 2013

Age	Cases	%	Population*	Age Rate <sup>†</sup>
< 1 year	25	34.2	14,769	169.3
1-6 years	9	12.3	79,993	11.3
7-10 years	13	17.8	52,872	24.6
11-19 years	9	12.3	126,648	7.1
20 – 49 years	15	20.5	342,784	4.4
50+ years	2	2.7	226,902	0.9
<b>Total</b>	<b>73</b>	<b>100.0</b>	<b>843,968</b>	<b>8.6</b>

## Pertussis Rates, By Age and Gender in El Paso County, 2013



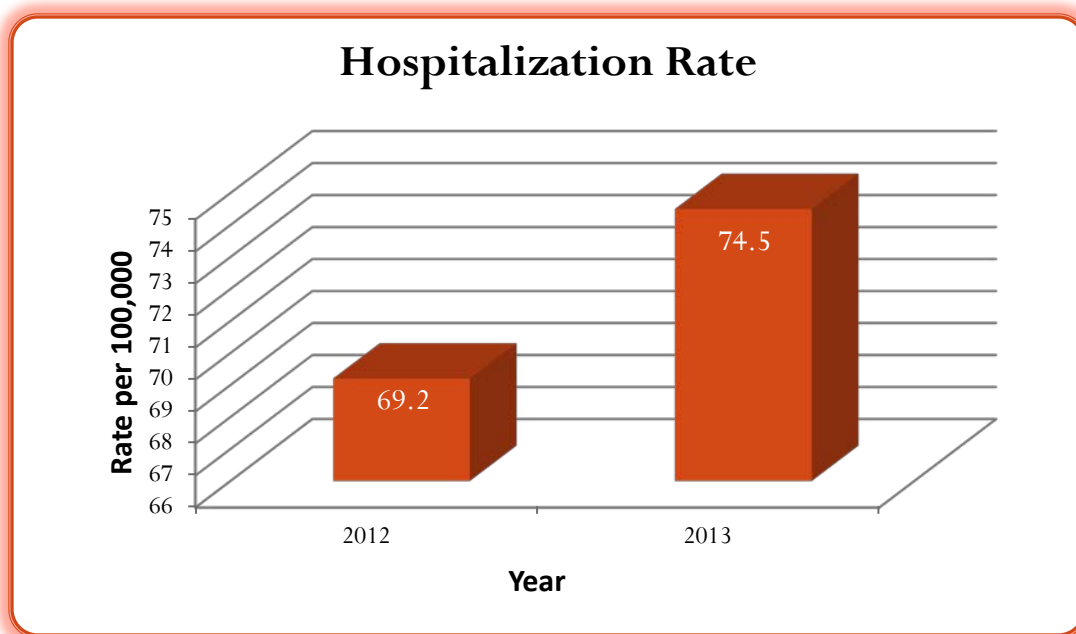
\*Texas Population Projections for 2013([www.dshs.state.tx.us/chs/popdat/downloads.shtm](http://www.dshs.state.tx.us/chs/popdat/downloads.shtm) )

<sup>†</sup> Rate per 100,000

## Pertussis Emergency Room Visits and Hospitalizations, By Age in El Paso County, 2013

Age	Reported Cases	ER Only No. (%)	Hospitalized No. (%)	Hospitalization Rate* <sup>†</sup>
< 1 year	25	6 (24.0)	11 (44.0)	74.5
1-6 years	9	0	0	0
7-10 years	13	1 (7.7)	0	0
11-19 years	9	0	1 (11.1)	0.8
20 – 49 years	15	1 (6.7)	0	0
50+ years	2	0	0	0
<b>Total</b>	<b>73</b>	<b>8 (11.0)</b>	<b>12 (16.4)</b>	

## Rate of Hospitalizations for Pertussis Among Infants Aged <1 year in El Paso County, 2012 -2013



\*Texas Population Projections for 2013([www.dshs.state.tx.us/chs/popdat/downloads.shtm](http://www.dshs.state.tx.us/chs/popdat/downloads.shtm) )

<sup>†</sup> Rate per 100,000

## DTaP Vaccination History of Pertussis Cases in El Paso County, 2013

Age	Under Age	Up-to-Date	Not-Up-to-Date	Total Cases
	No. (%)	No. (%)	No. (%)	No.
< 6 months	4 (18.2)	10 (45.4)	8 (36.4)	22
6-11 months		0	3 (100)	3
1-4 years		5 (83.3)	1 (16.7)	6
5-6 years		2 (66.7)	1 (33.3)	9
<b>Total</b>	<b>4 (11.8)</b>	<b>17 (50)</b>	<b>13 (38.2)</b>	<b>34</b>

## Hispanic Status in El Paso County, 2009 - 2013

