

# Child and Adolescent Health

## CHILD AND ADOLESCENT MORTALITY

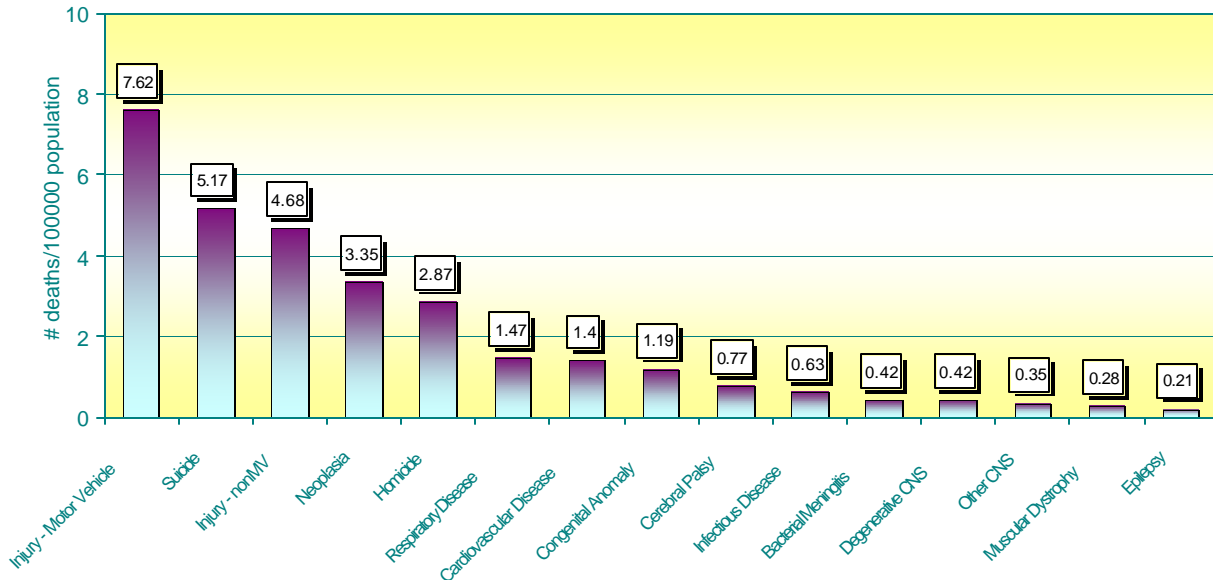
Jefferson County's child and adolescent mortality rates are similar to those of the nation and the *Healthy People 2010* targets (16-2) (Table 2). The largest difference between the county and nation appears to be in the 5-9 year age group, wherein Jefferson County's 1990-2000 mortality rate was 28% lower than the national rate and exceeded the 2010 target.

**Table 2. Child and adolescent mortality rates, Jefferson County and U.S.; and comparison with *Healthy People 2010* targets.**

Age group (years)	Age-specific death rates (number of deaths per 100,000 population)		
	Jefferson County 1990-2000	U.S. 1998	Healthy People 2010 Target
1 to 4	33.2	34.2	25.0
5 to 9 years	12.6	17.6	14.3
10 to 14 years	21.7	21.8	16.8
15 to 19 years	64.7	69.7	43.2

Among children and adolescents aged 1 to 19 years, the leading causes of death (Figure 21) were injury from motor vehicle accidents, suicide, injury not associated with motor vehicles, cancer and homicide. Among the leading causes, only one cause, neoplasia, was natural. The other four leading causes were accidental or intentional, and therefore considered preventable.

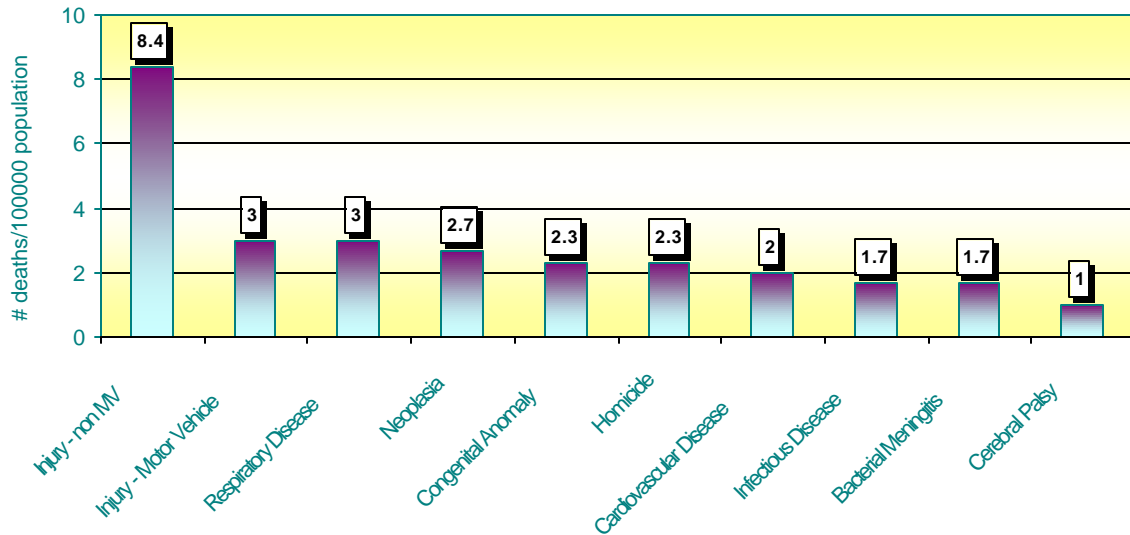
**Figure 21. Leading causes of death among children and adolescents aged 1-19 years, Jefferson County, 1990-2000**



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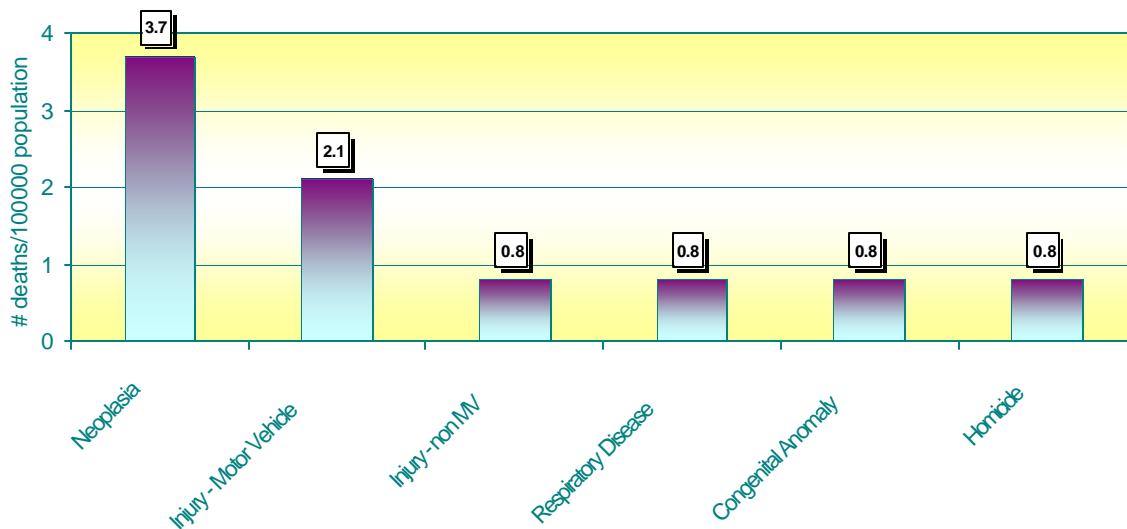
Age- and cause-specific mortality among children aged 1-4, 5-9, 10-14 and 15-19 years show the shifts in causes and ranges of mortality by age group (Figures 22-25). Among children aged 1-4 years, the leading causes of mortality were injuries, respiratory conditions, neoplasia and congenital anomalies:

**Figure 22. Leading causes of death among children aged 1-4 years, Jefferson County, 1990-2000**



Among children aged 5-9 years the leading causes were cancer and motor vehicle injuries:

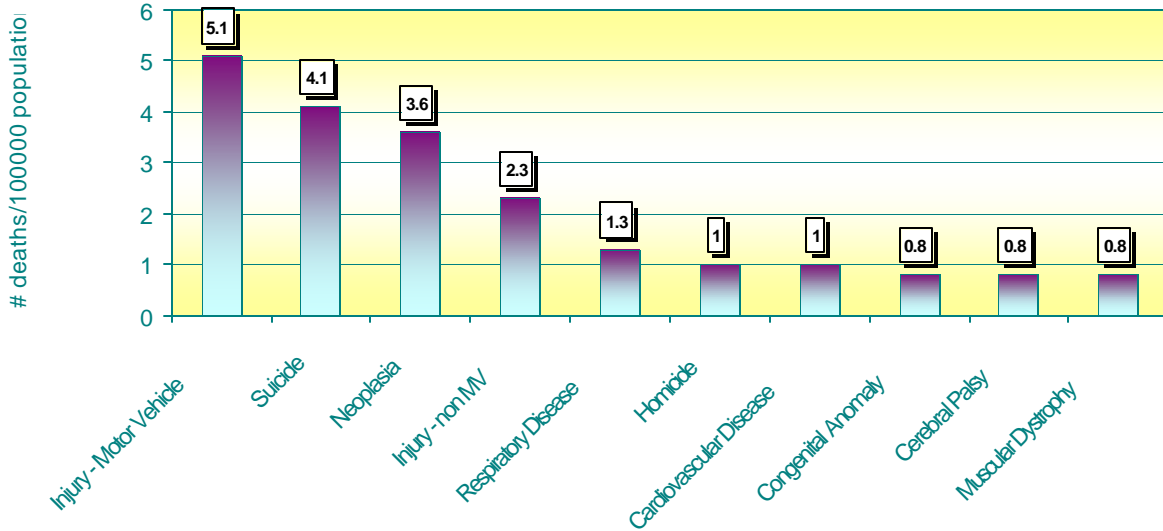
**Figure 23. Leading causes of death among children aged 5-9 years, Jefferson County, 1990-2000**



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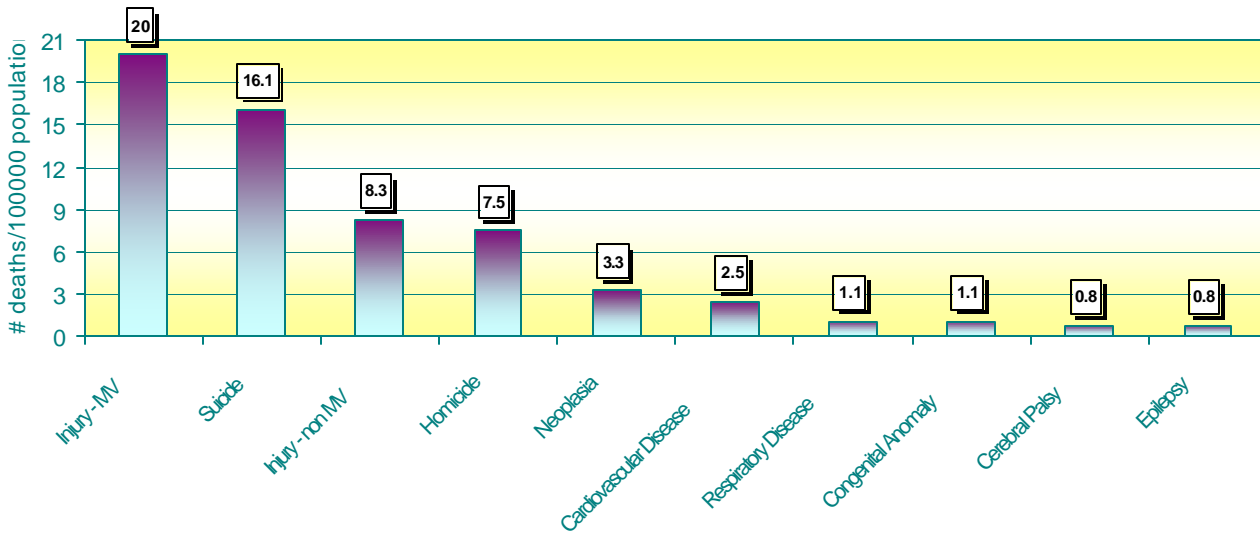
Among those aged 10-14 the leading causes were motor vehicle injuries, suicide and neoplasia:

**Figure 24. Leading causes of death among children aged 10-14 years, Jefferson County, 1990-2000**



For adolescents aged 15-19 the leading causes were motor vehicle accidents, suicide, non-MV injuries, homicide and neoplasia:

**Figure 25. Leading causes of death among adolescents aged 15-19 years, Jefferson County, 1990-2000**



The homicide mortality rate among 15-19 year-olds was strongly influenced by the Columbine High School shooting in April 1999. However, in the absence of that event, homicide would remain the fourth leading cause of death (but with a lower rate of 4.4 deaths per 100,000 population).

## COMMUNICABLE DISEASES AND REPORTABLE CONDITIONS

Passive surveillance for communicable diseases and reportable conditions is conducted statewide by the CDPHE Disease Control and Environmental Epidemiology Division in conjunction with all local health departments, hospitals and laboratories. Occurrences of specified conditions or diseases are reported to the appropriate county disease control program for further investigation and disease control measures. In Jefferson County, the Community Health Services Division Communicable Disease Control Program is responsible for investigation and followup of communicable diseases and the Environmental Health Division is responsible for investigations and followup of foodborne illness and environmental conditions.

### Foodborne and Enteric Diseases

*Healthy People 2010* objective 10.1 addresses reducing infections caused by key foodborne pathogens *Campylobacter* species, *Escherichia coli* O157:H7, *Listeria monocytogenes*, and *Salmonella* species. In 1997, the U.S. Centers for Disease Control and Prevention, Food and Drug Administration and Department of Agriculture implemented the FoodNet system for population-based surveillance on culture-confirmed cases of foodborne illnesses. Colorado joined the FoodNet program in 2001; however, prior to joining the system, CDPHE conducted passive surveillance for several foodborne and enteric diseases.

Among children aged 0-19 years, incidence rates of diseases caused by enteric organisms illustrate the high rate of infection among very young children, i.e. those aged 0-4 years.

*Campylobacter* species infection. The *Healthy People 2000* objective for *Campylobacter* infections was a reduction to 25 cases/100,000 population. The national incidence rate in 1997 (from the FoodNet reporting system) was 24.6 cases/100,000 population, indicating that the national objective had been met. In the two-year period from November 1 1999 through October 31 2001, there were 32 incident cases of *Campylobacter* infection in children and adolescents in Jefferson County. Age-specific incidence rates (Table 3) show that, in Jefferson County children, infection rates were better than the 2000 national objective.

**Table 3. Age-specific incidence rates for *Campylobacter* species infection, November 1999 to October 2001.**

Age (years)	Incidence rate (#cases/100,000 population)
0 to 19	10.9
<1	15.3
1-4	18.8
5-9	6.8
10-14	13.9
15-19	5.3

*Escherichia coli* (*E. coli*) O157:H7 infection. There were 36 incident cases of *E. coli* O157:H7 infection among Jefferson County children and adolescents in the five-year period November 1 1996 through October 31 2001. The *Healthy People 2000* objective for the general population (all ages) was 4 cases/100,000 population and the 1997 incidence rate was 2.1 cases/100,000 population. Incidence rates among Jefferson County children appear to be higher than rates among the U.S. general population.

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**Table 4. Age-specific incidence rates for *E. coli* O157:H7 infection, November 1996 to October 2001.**

Age (years)	Incidence rate (#cases/100,000 population)
<b>0 to 19</b>	5.0
<1	3.1
1-4	5.2
5-9	4.5
10-14	5.2
15-19	5.4

*Listeria monocytogenes* infection. The incidence rate for *Listeria* infection among Jefferson County children aged 0-19 years for the five-year period November 1 1996 through October 31 2001 was 0.1 case/100,000 population. This is well below the *Healthy People 2000* target and 1997 national incidence rate of 0.5 case/100,000 population.

*Salmonella* species infection. The *Healthy People 2000* objective for *Salmonella* infection in the general population was a reduction to 16 cases/100,000 population. In 1997 the national incidence rate reported by the FoodNet system was 13.7 cases/100,000 population. Among Jefferson County children and adolescents during the five-year period November 1 1996 to October 31 2001, there were 146 salmonellosis cases, or 20.4 cases/100,000 population (Table 5). The incidence rates among infants (12 months or younger) and children younger than 4 years of age were dramatically higher than the 2000 target.

**Table 5. Age-specific incidence rates for *Salmonella* species infection, November 1996 to October 2001.**

Age (years)	Incidence rate (#cases/100,000 population)
<b>0 to 19</b>	20.4
<1	49.4
1-4	36.0
5-9	18.1
10-14	12.2
15-19	14.6

### Other Enteric Infections

Communicable disease control programs conduct surveillance for several other enteric diseases not tracked by the *Healthy People 2000* or *2010* programs. National health objectives have not been described for illnesses due to infection with hepatitis A virus, *Shigella* bacteria, or the parasites *Giardia* and *Cryptosporidia*. Age-specific incidence rates for these infections are in Table 6.

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**Table 6. Age-specific incidence rates for hepatitis A, *Shigella* species, *Giardia* and *Cryptosporidia* infection, November 1996 to October 2001.**

Age (years)	Incidence rate (#cases/100,000 population)			
	<i>Hepatitis A</i>	<i>Shigella</i>	<i>Giardia</i>	<i>Cryptosporidia</i>
<b>0 to 19</b>	3.8	5.0	27.1	0.6
<1	3.1	6.2	21.6	6.2
1-4	2.2	13.5	57.7	0.0
5-9	4.0	4.5	30.6	0.0
10-14	4.8	2.1	13.8	0.5
15-19	3.8	2.2	16.3	0.5

### Vaccine-Preventable Diseases

Communicable disease control programs at CDPHE and JCDHE conduct passive surveillance for all childhood vaccine-preventable diseases and influenza. These include diphtheria, tetanus, pertussis (whooping cough), measles, mumps, rubella, polio, hepatitis B, and *Haemophilus influenzae* type b. The *Healthy People 2000* objectives for diphtheria, tetanus, polio, measles, and rubella infection were zero cases nationwide. For mumps the national objective was 500 cases, and for pertussis, 1,000 cases. Between 1988 and 1997, the number of pertussis cases in the U.S. grew from 3,450 to 6,564. For the same period, the number of cases of mumps declined from 4,866 to 683.

There were no cases of diphtheria, tetanus, measles, mumps, rubella, or polio reported in Jefferson County children in the five-year period ending October 31, 2001.

The most prevalent vaccine-preventable disease occurring in Jefferson County children and adolescents was pertussis; in the five-year period ending October 31 2001, there were 267 cases (Table 7). The second most prevalent disease was influenza. It should be noted that the figures reported herein reflect only those influenza cases confirmed by testing.

**Table 7. Age-specific incidence rates for vaccine-preventable diseases, November 1996 to October 2001.**

Age (years)	Incidence rate (#cases/100,000 population)				
	<i>Pertussis</i>	<i>Influenza</i>	<i>Hepatitis B – Chronic</i>	<i>Hepatitis B – Acute</i>	<i>H. influenzae type b</i>
<b>0 to 19</b>	37.3	13.8	4.0	0.6	0.6
<1	67.9	67.8	3.1	3.1	3.1
1-4	36.7	23.2	2.2	0.0	2.2
5-9	23.2	14.2	0.0	0.0	0.0
10-14	10.3	6.9	3.7	0.0	0.0
15-19	19.5	3.8	9.8	1.6	0.0

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### Other Reportable Conditions

Public health departments conduct passive surveillance for several other infectious or chronic diseases or conditions, often of concern because of their communicable or preventable nature. Tables 8, 9 and 10 list those conditions for which systematic population-based surveillance data are available, and for which 3 or more cases were reported among Jefferson County children in the preceding two-year or five-year periods.

**Table 8. Age-specific incidence rates for hepatitis C, aseptic meningitis, bacterial meningitis, and meningococcal infection, November 1996 to October 2001.**

Age (years)	Incidence rate (#cases/100,000 population)			
	Hepatitis C	Aseptic meningitis	Bacterial meningitis	Meningococcal disease
0 to 19	1.0	8.5	0.7	1.2
<1	6.2	40.1	12.3	3.1
1-4	1.5	4.5	0.7	0.7
5-9	0.0	9.0	0.0	0.0
10-14	0.0	4.8	0.0	1.0
15-19	1.6	9.2	0.0	2.7

**Table 9. Age-specific incidence rates for *Streptococcus* species infection.**

Age (years)	Incidence rate (#cases/100,000 population)		
	Group A Invasive (November 2000 – October 2001)	Group B Invasive (September 2000 – August 2001)	<i>S. pneum.</i> invasive (November 1996- October 2001)
0 to 19	4.1	2.0	4.5
<1	0.0	9.2	18.5
1-4	7.6	0.0	16.5
5-9	2.8	0.0	0.6
10-14	5.0	0.0	1.0
15-19	2.6	0.0	0.5

**Table 10. Age-specific incidence rates for amoebiasis, Kawasaki syndrome and animal bites, November 1996 to October 2001.**

Age (years)	Incidence rate (#cases/100,000 population)		
	Amoebiasis	Kawasaki syndrome	Animal bites
0 to 19	1.0	1.2	3.1
<1	3.1	3.1	0.0
1-4	0.0	4.5	4.5
5-9	0.6	1.1	5.1
10-14	0.5	0.0	2.1
15-19	2.2	0.0	1.6