

Oklahoma State Report

State Public Health Vector Control Conference



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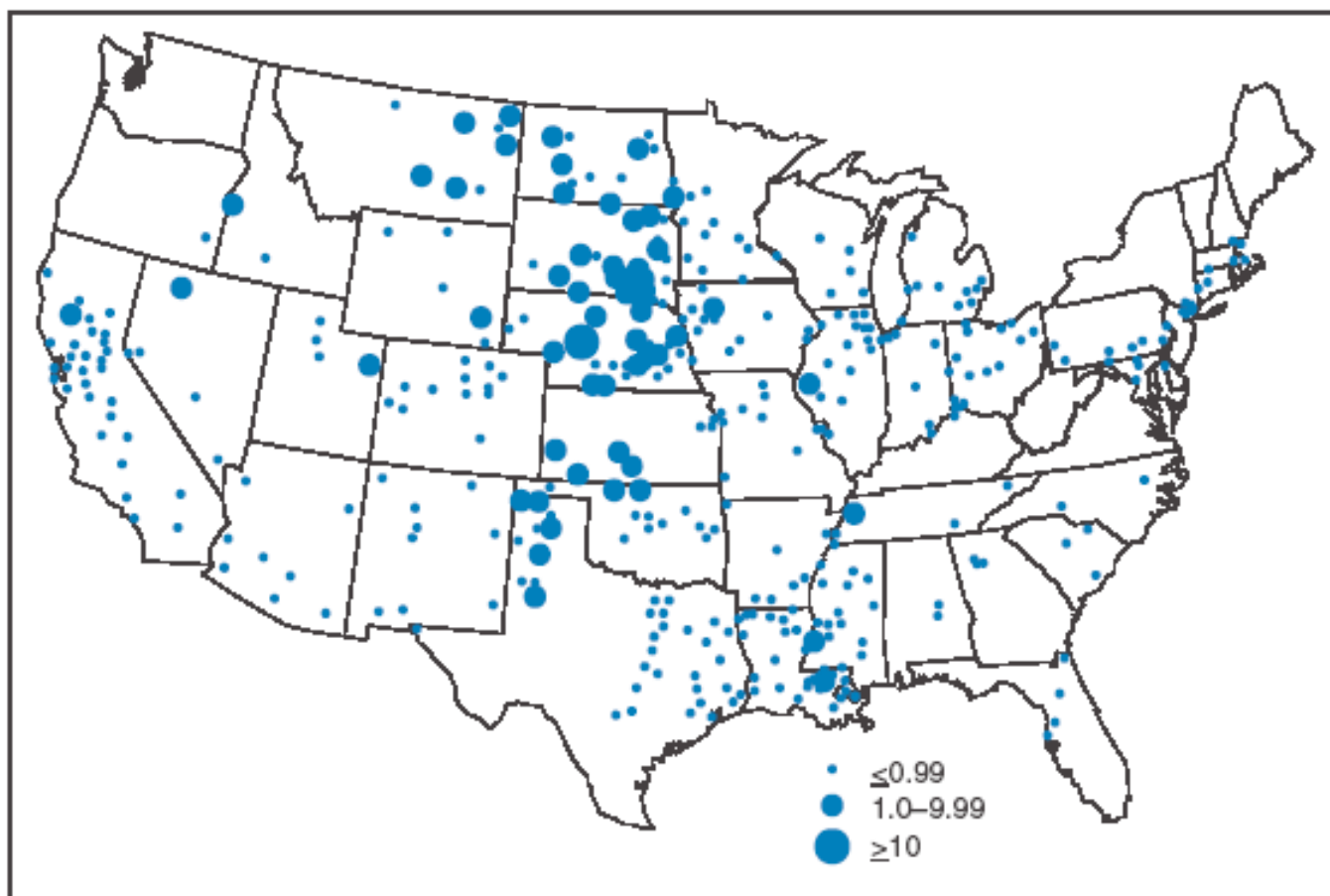
West Nile Virus Experience -- Oklahoma, 2002-05



	2002	2003	2004	2005
# Human cases	21	79	22	31
# NAT+ Blood Donors	---	26	7	17
# Human deaths	2	0	3	1
# Equine cases	965	169	32	32
# Positive dead birds	441	401	388	----*
# Positive mosquito pools		11	17	45

* Bird surveillance discontinued

FIGURE 1. Incidence* of West Nile virus neuroinvasive disease† in humans — United States, 2005‡

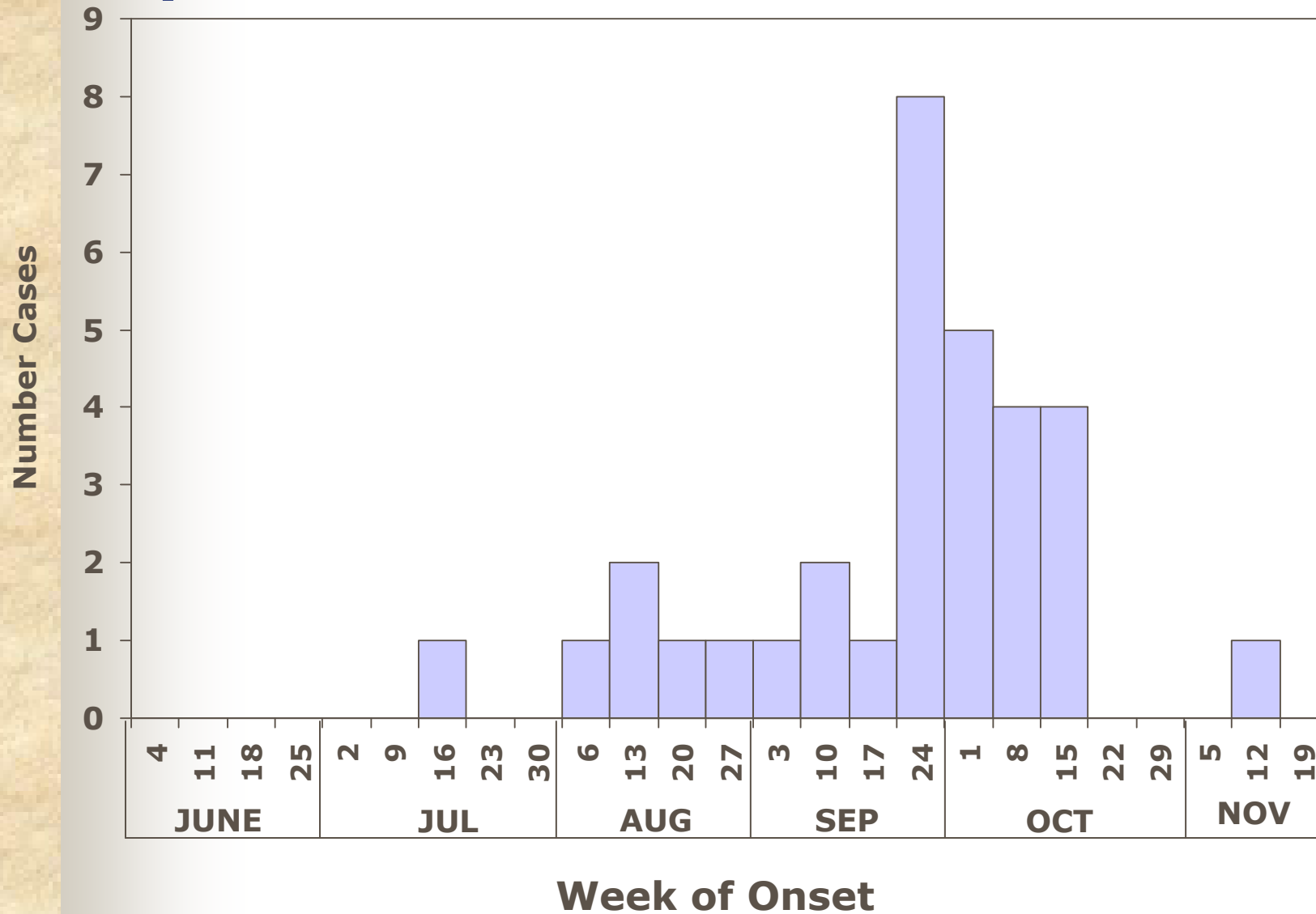


* Per 100,000 county residents.

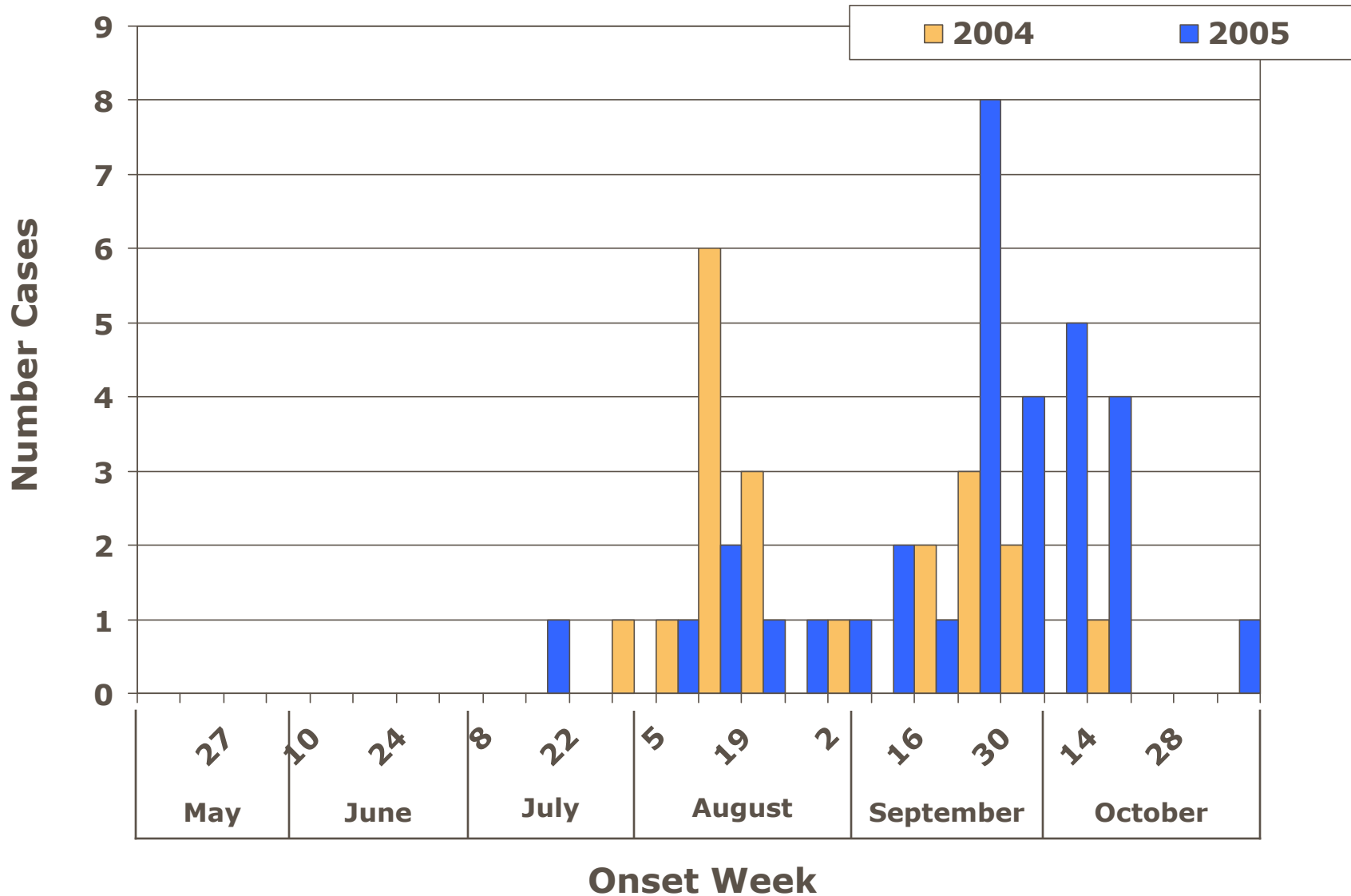
† Meningitis, encephalitis, or acute flaccid paralysis.

‡ Provisional data as of December 1, 2005.

Human Cases of West Nile Virus by Week of Onset- Oklahoma, 2005



Comparative Epi-Curves for Human West Nile Disease; Oklahoma, 2004 & 2005



Epidemiology: Oklahoma 2005 West Nile Disease

- 31 confirmed cases; 17 PVDs (9 PVDs met case definition)
- 19 (61%) male
- Median age = 48 yrs.(range:17-82)
- 97% white, 3% black
- 56% recalled mosquito bites;
2 probable exposures in LA
- 48% (15/31) hospitalized
- One death (48 yo man with
WN encephalitis)





Epidemiology: Oklahoma 2005 West Nile Disease

■ Symptomatology

- 93.5% fever
- 83.3 % severe muscle weakness
- 73.3 % headache
- 44.0 % photophobia
- 41.9 % rash
- 19.4% altered mental status
- 6.9% paralysis

WN Vectors in Oklahoma

■ *Culex tarsalis*

- most prevalent in the western half of the state
- 10/17 (59%) WNV+ pools in 2004
- 1/45 (2.2%) WNV+ pools in 2005
- Best trapping yield with mini blacklight trap baited with CO² from cylinders at 250 ml/min + octenol



■ *Culex pipiens quinquefasciatus*

- common urban complex mosquito in Oklahoma
- 7/17 (41%) WNV+ pools in 2004
- 43/45 (95.5%) WNV+ pools in 2005
- Best trap is CDC gravid trap w/ fermented Bermuda grass





Mosquito Surveillance in Oklahoma: Comparison of 2004 & 2005 Seasons

	2004	2005
# Sites	10	6
Trapping duration	4/15/04 – 10/16/04	4/25/05 – 11/8/05
Total adult females collected	12,868	26,757
# Pools tested	523	378
# Positive	17 (3.25%)	45 (11.9%)
Range of WNV+ collections	July 21 – Sept 27	July 27 – Nov 1
Predominant + spp	<i>C. tarsalis</i>	<i>C. quinquefasciatus</i>

2005 Adult Mosquito Trapping in Suburban Oklahoma Sites using Blacklight, CDC Light and Gravid Traps

- 62 mosquito species established in Oklahoma based on previous records and collections (2003-05)
- 29 species trapped in 2005
- Of 26,757 adult females:
 - *Culex quinquefasciatus* 58.2%
 - *Aedes albopictus* 10.5%
 - *Aedes vexans* 9.1%
 - *Culex erraticus* 8.0%
 - *Psorophora cyanescens* 5.8%





2005 WNV Season “Aberrations”

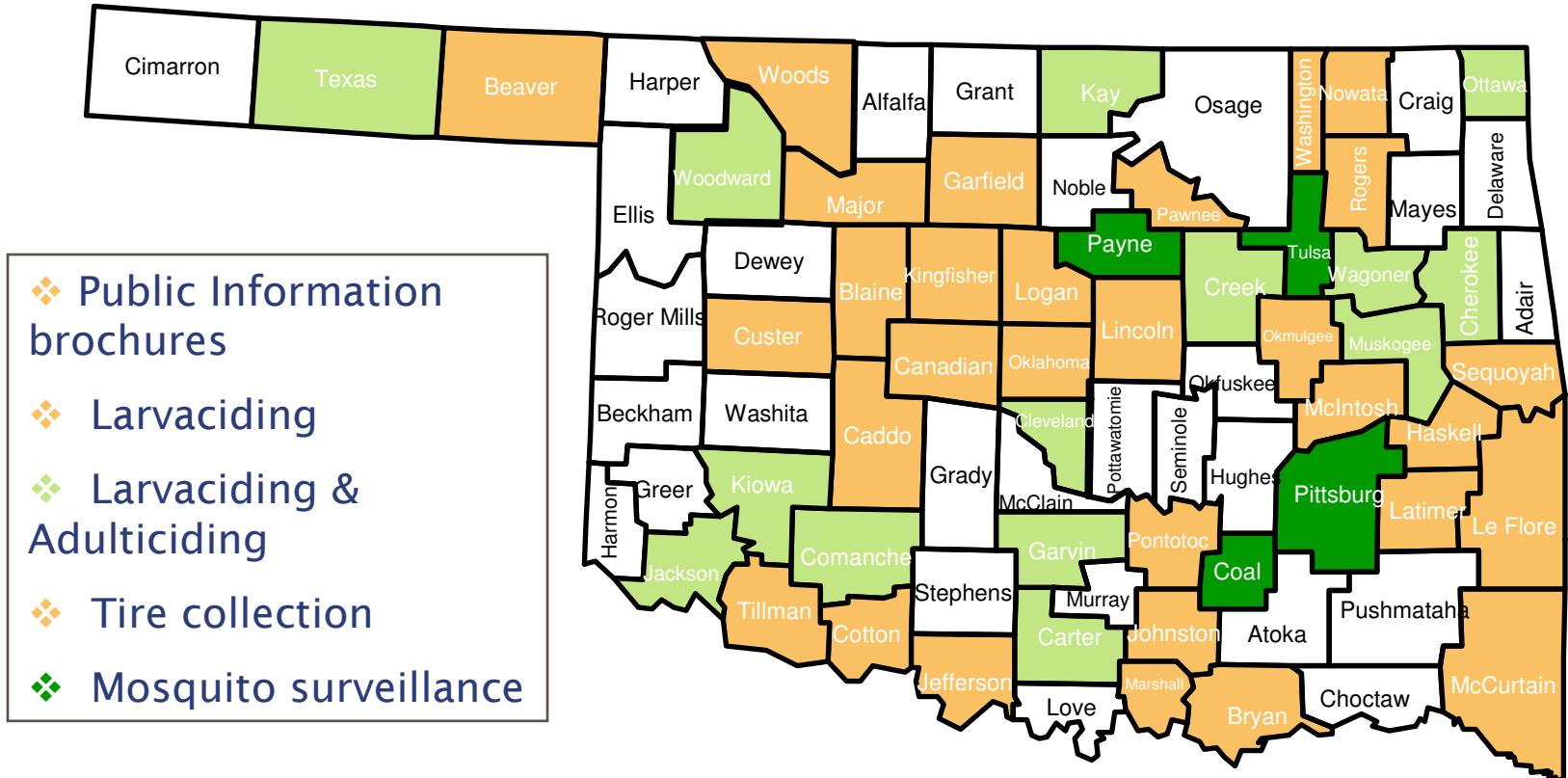
- Peak activity 5-6 weeks later than observed in previous seasons
- High proportion of viremic blood donors to total cases
 - 17/31 (55%) compared to 33% in '03 & '04
 - greater proportion of symptomatic blood donors
- Relatively high proportion of patients reporting rash as a symptom
- Longer season

Oklahoma's Increase in Mosquito Control Capacity

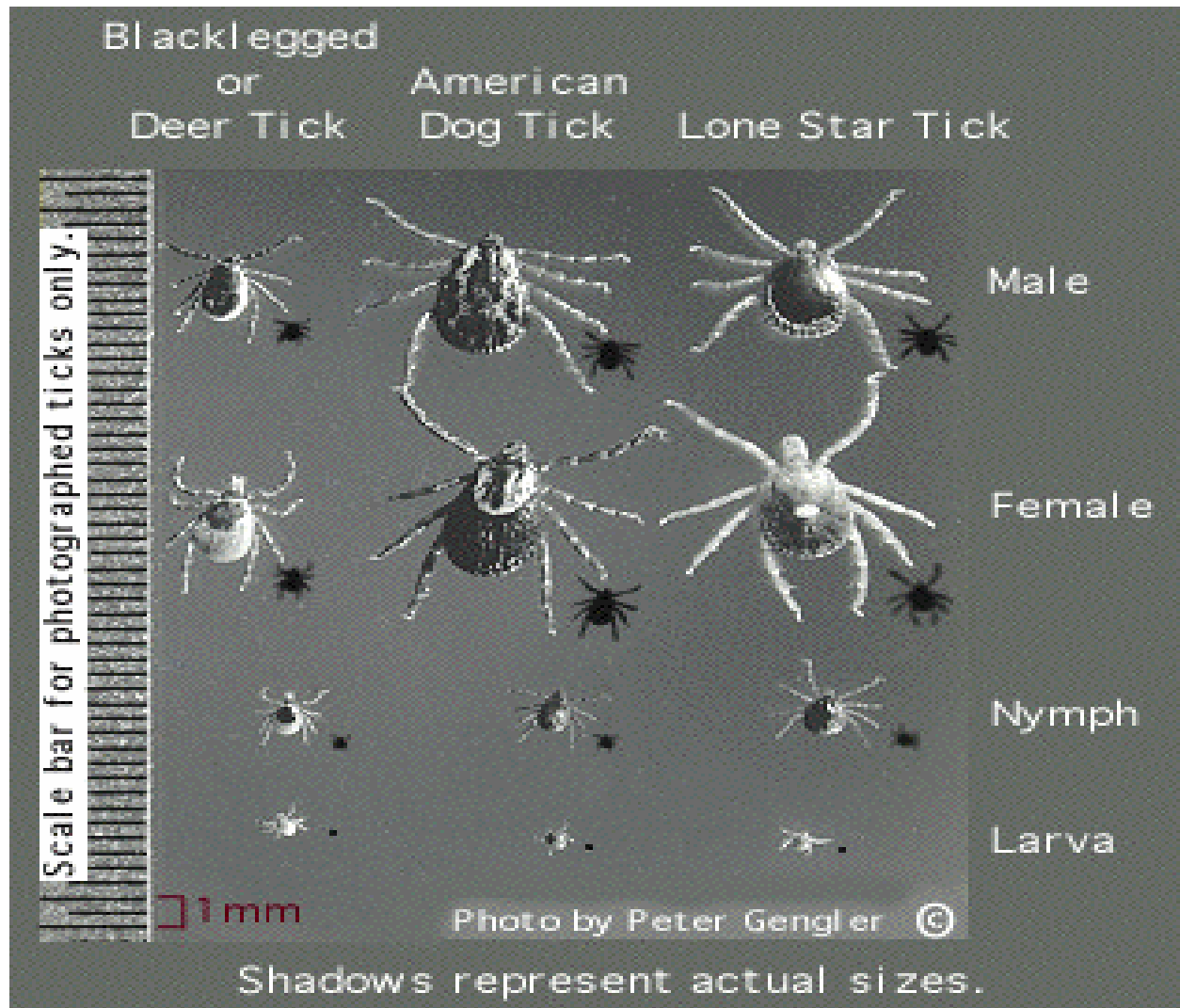
- Two of 77 county health depts managing community mosquito control pre-WNV
- Increased to nine in 2003 with ELC WNV supplemental funding
- 20 counties had funding support in 2004
- 41 counties with minimum of larvaciding capabilities in 2005
 - tire collection & recycling, training of city personnel, larvaciding, adulticiding



Oklahoma Counties Receiving Federal Grant Funding for Local West Nile Virus Prevention & Control Programs*



Tick Vectors Found in Oklahoma

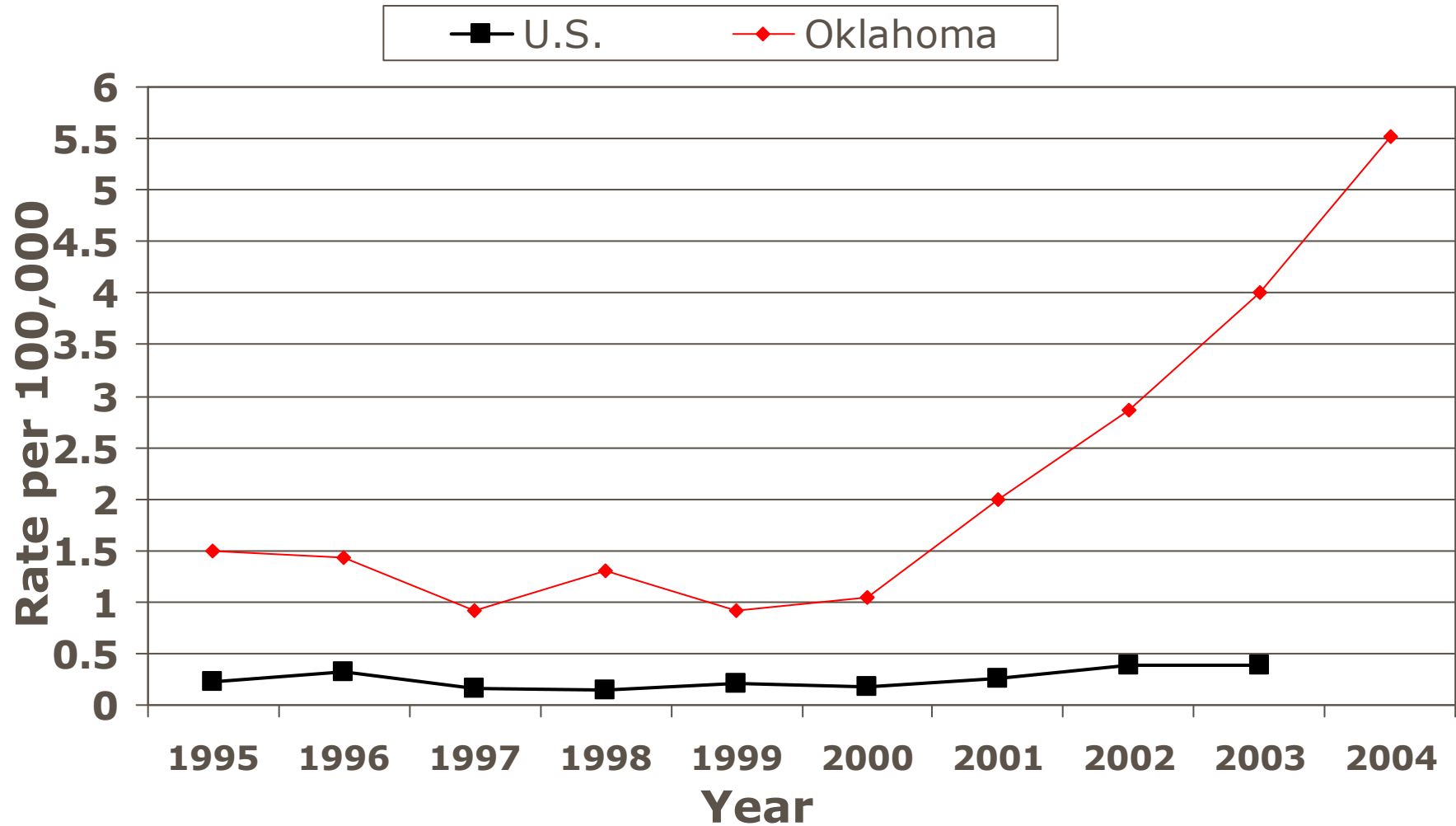




Reported Cases of Tickborne Illness Oklahoma, 2000 - 2004

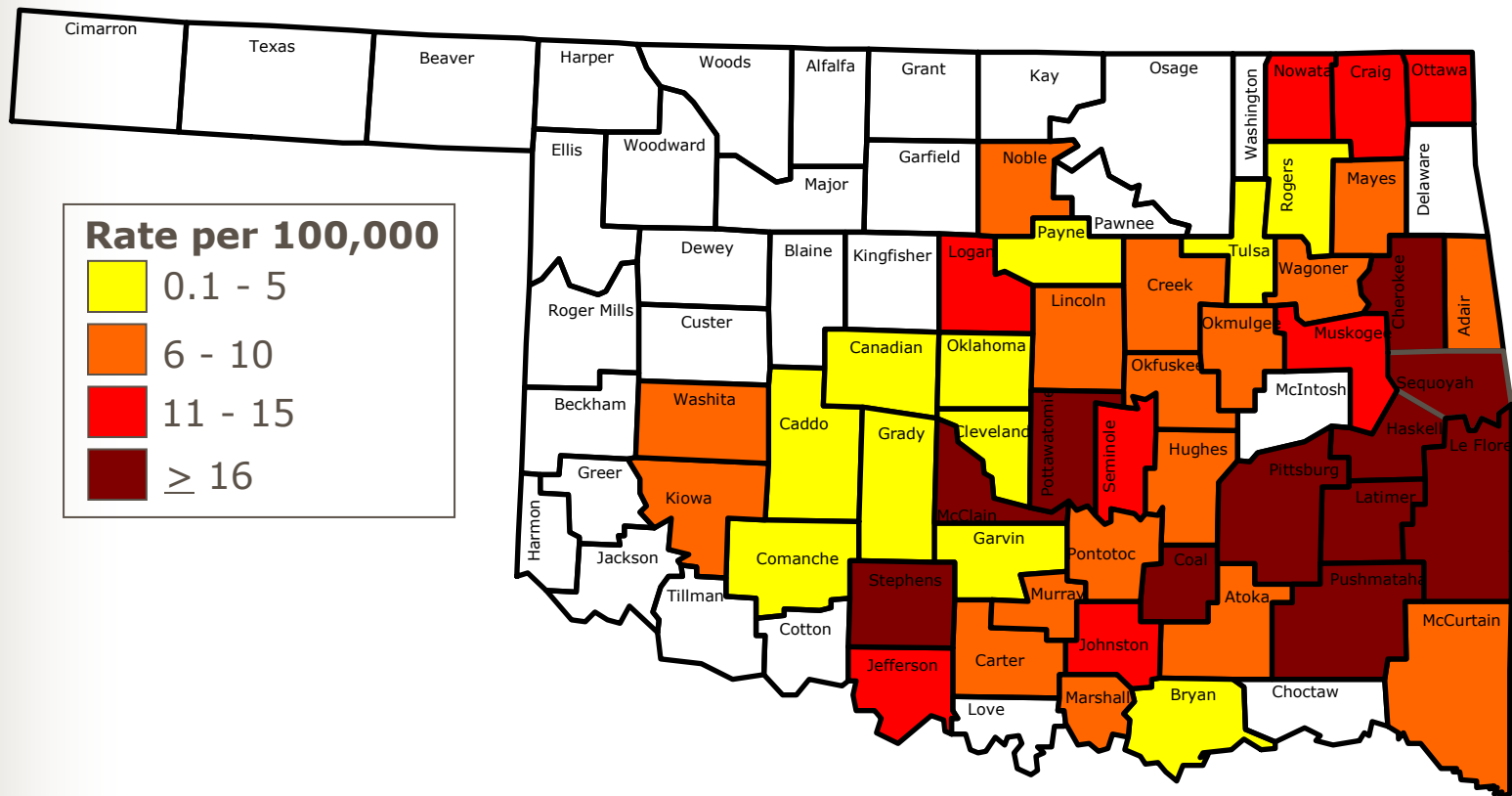
Rocky Mountain Spotted Fever	<i>Avg of 107 cases/yr Highest age-specific IR in 40 – 59 yr olds 1 death/year</i>
Ehrlichiosis	<i>Avg of 26 cases/yr 120/133 cases – HME Decrease in hospitalization rate (83% to 44% in 2004)</i>
Tularemia	<i>Avg of 11 cases/yr 55% reported tick bite Case fatality rate = 7.7%</i>

Rocky Mountain Spotted Fever Incidence Rate by Year, Oklahoma and U.S., 1995 - 2004

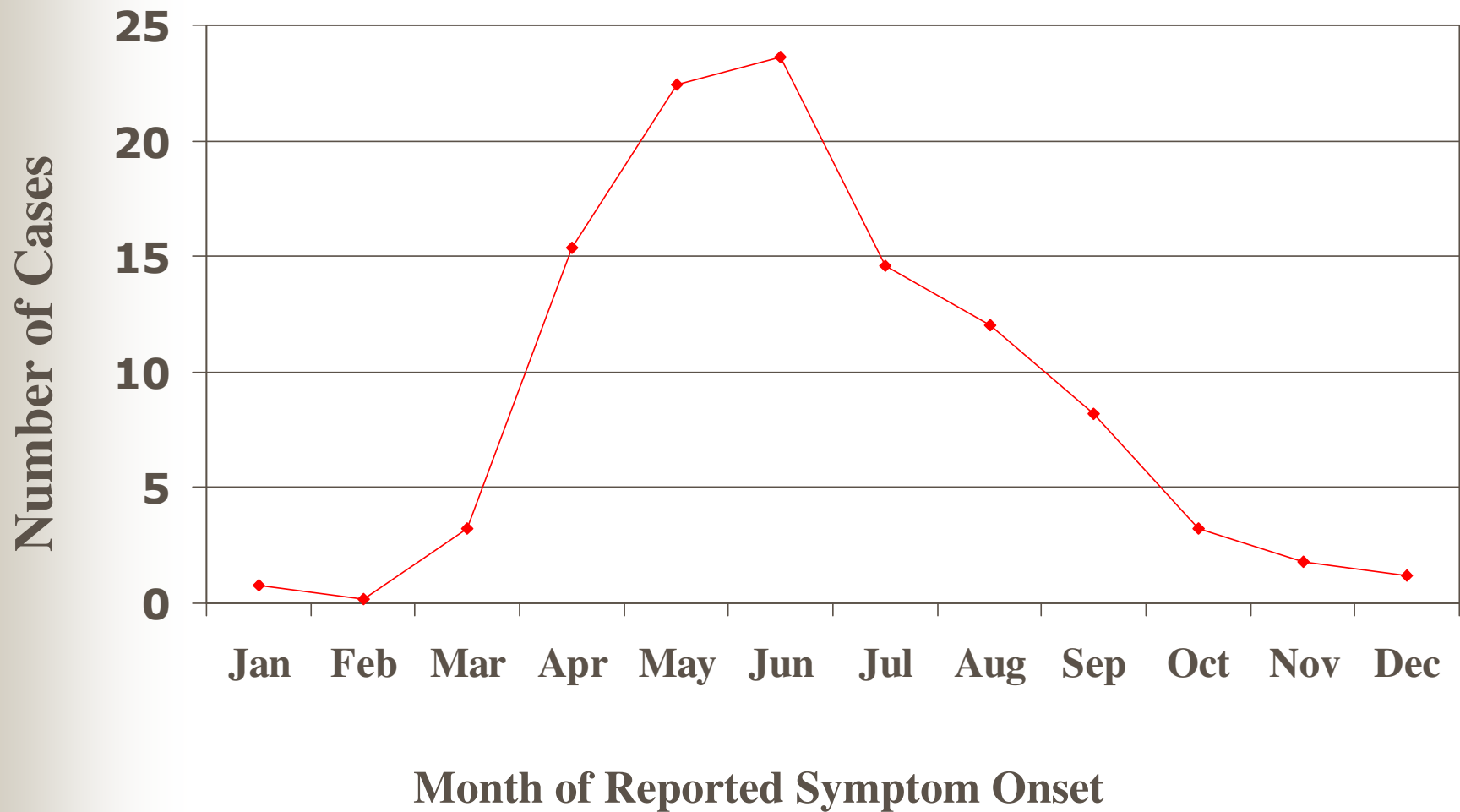


National incidence rate not available for 2004.

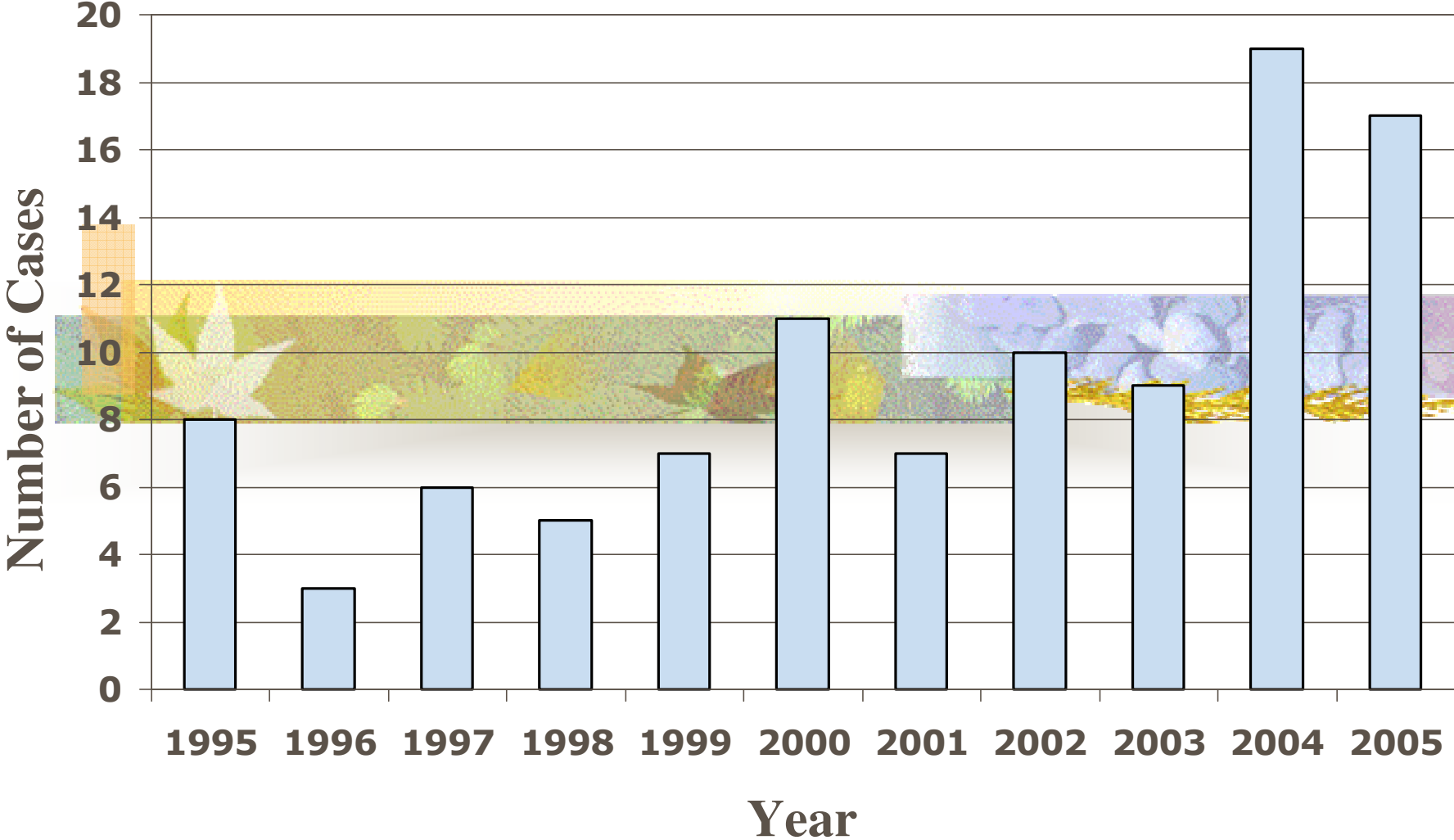
Rate of Reported RMSF Cases by County of Residence, Oklahoma, 2004



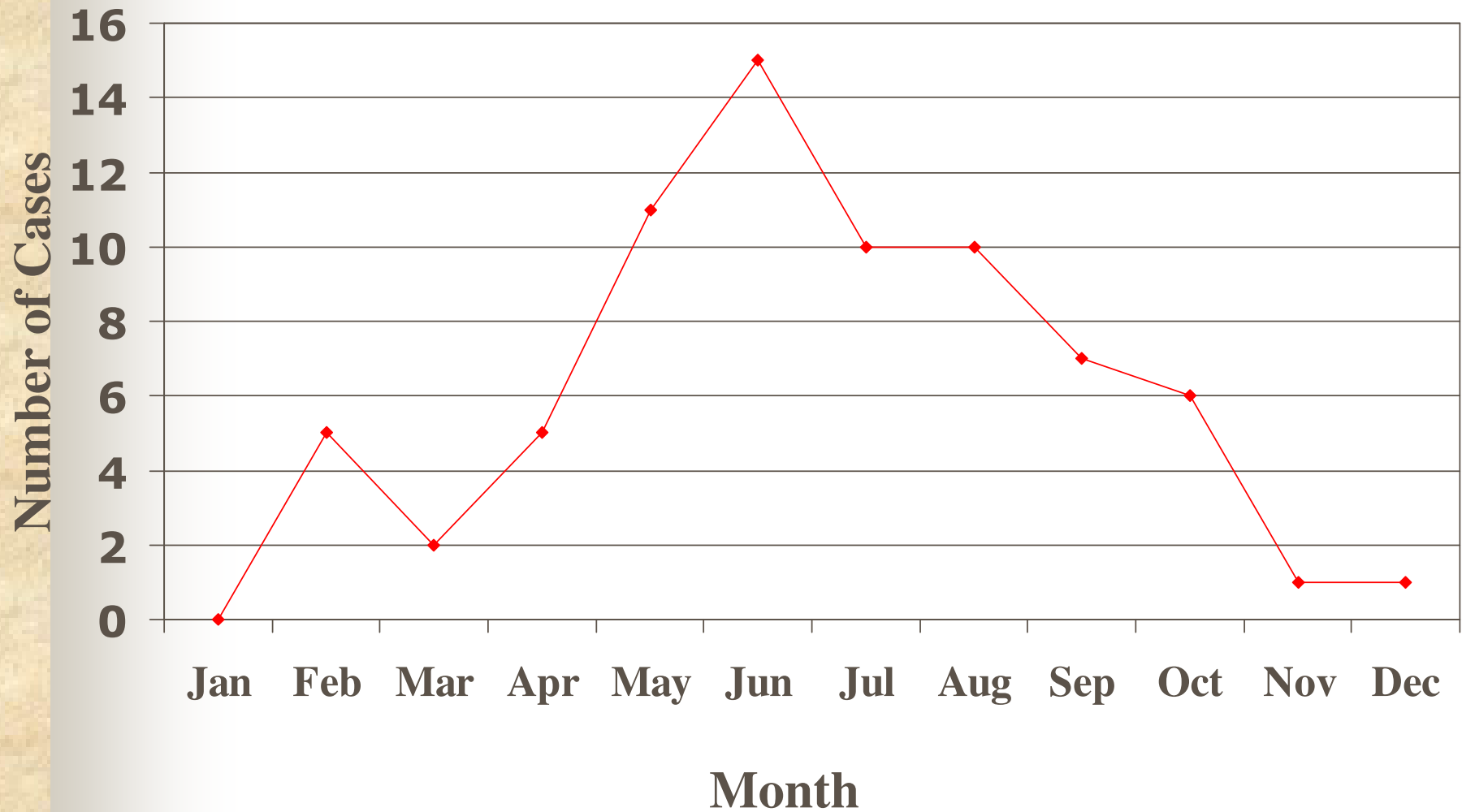
Mean Number of Reported Rocky Mountain Spotted Fever Cases by Month of Onset, Oklahoma, 2000-2004



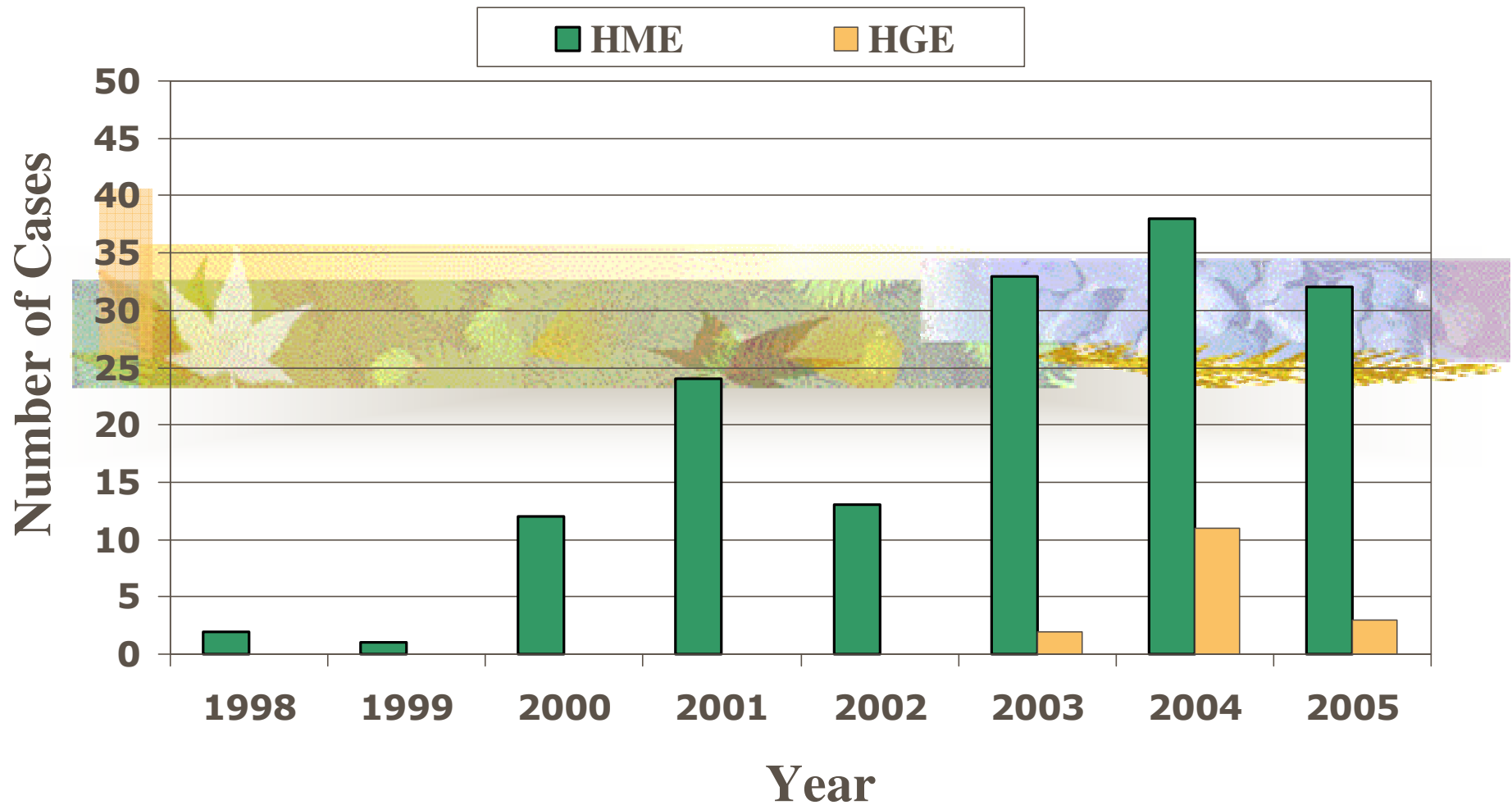
Reported Number of Tularemia Cases by Year, Oklahoma, 1995-2005



Oklahoma Tularemia Cases by Month of Symptom Onset, Oklahoma, 2000-2005

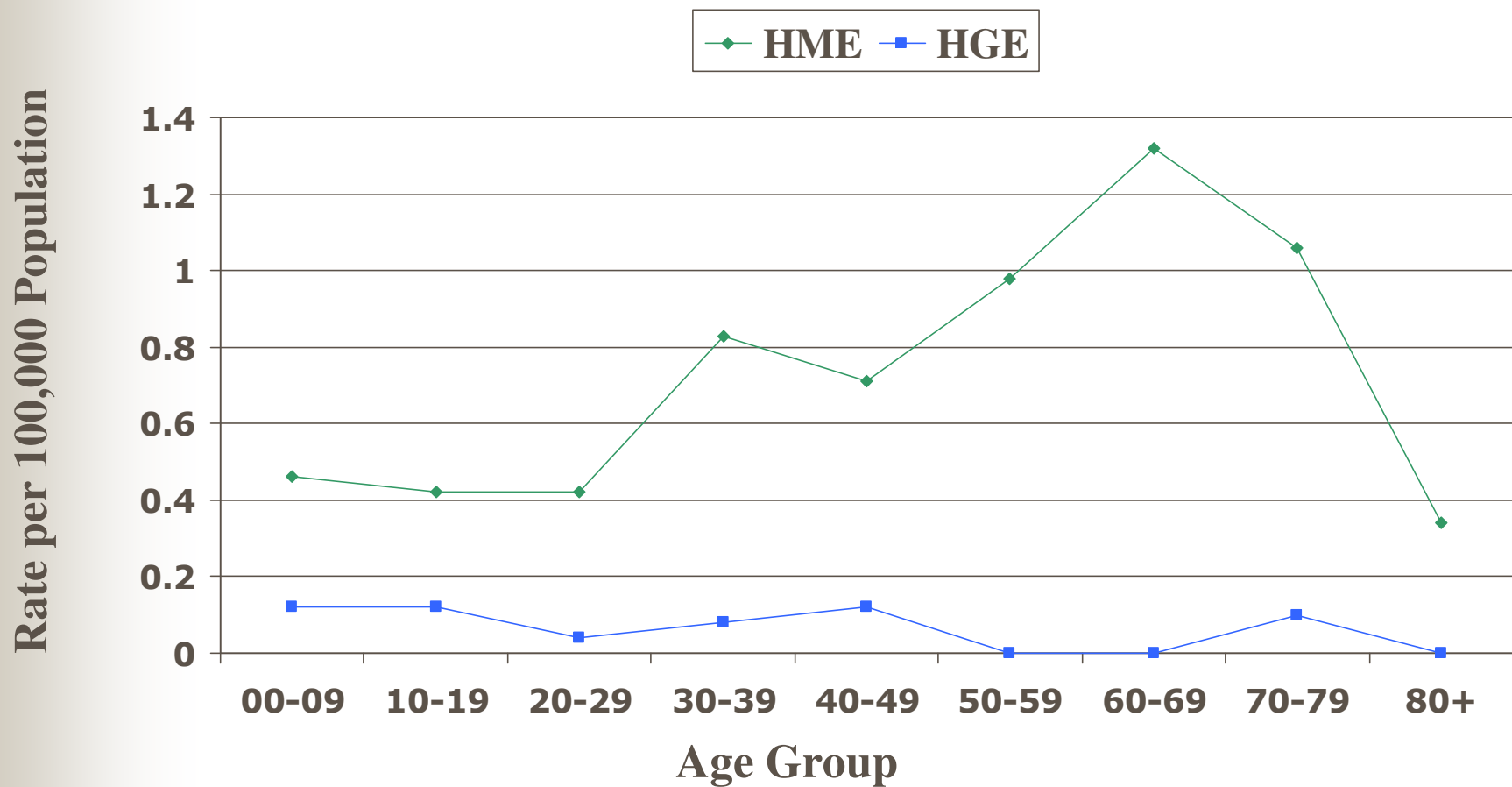


Reported Number of Ehrlichiosis Cases by Year, Oklahoma, 1998*-2005



* Ehrlichiosis first identified in Oklahoma

Average Annual Incidence Rate of Reported Ehrlichiosis Cases by Age Group, Oklahoma, 2000-2004



Oklahoma ... more variety than you would imagine.....

