

POPULATION DENOMINATORS: Measuring risk, morbidity and mortality to improve health, well-being, and reduce disparities

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Sioux Falls**

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South Dakota Department of Health

doh.sd.gov/strategicplan

Vision

Healthy People
Healthy Communities
Healthy South Dakota

Mission

To promote, protect and improve the health of every South Dakotan

Guiding Principles

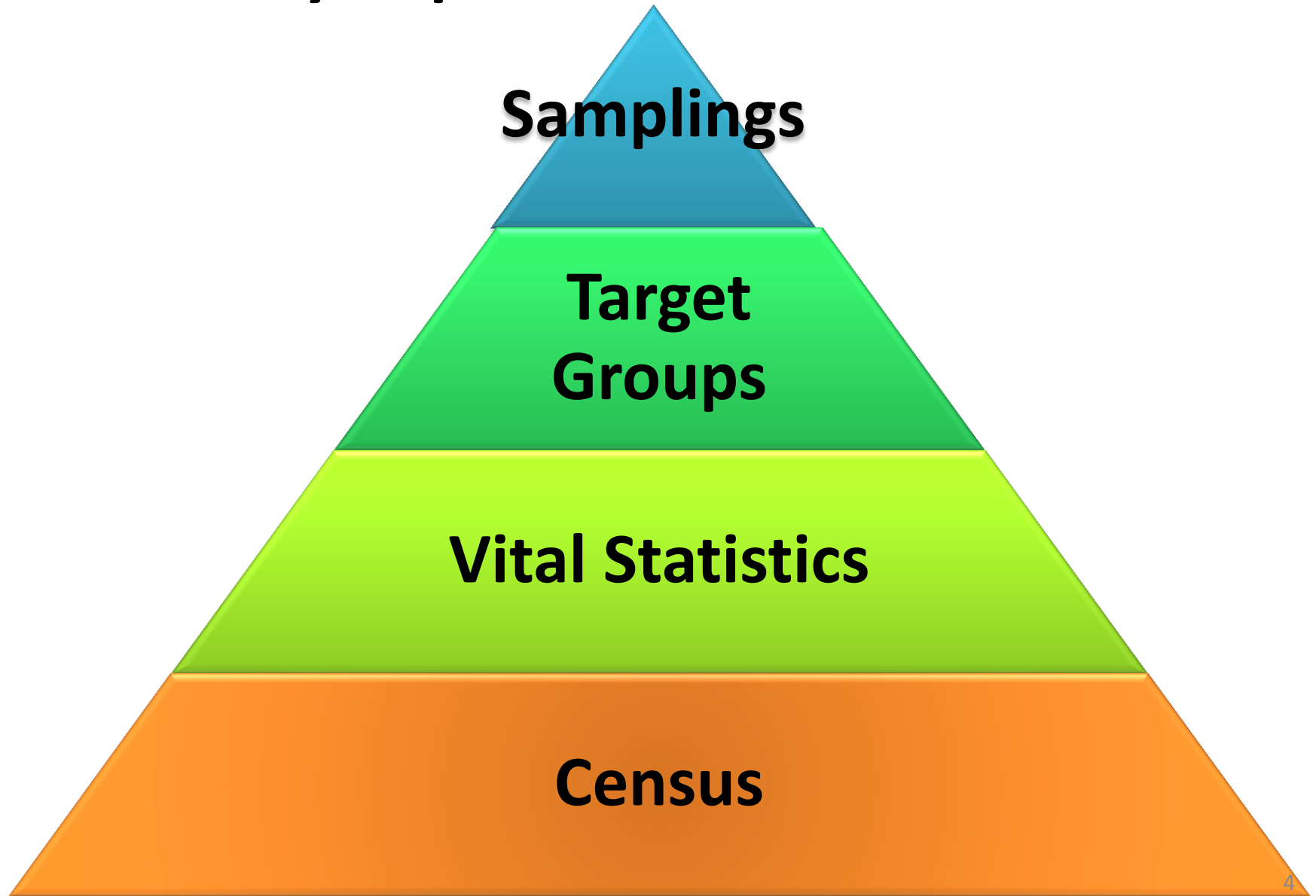
Serve with integrity
Eliminate health disparities
Demonstrate leadership and accountability
Focus on prevention and outcomes
Leverage partnerships
Promote innovation



Public health Demographics

- Basic demographic characteristics essential to Public Health.
- Populations denominators define your jurisdiction.
- Denominators calculate disease rates and risk
- essential in comparing populations.
- essential in determining disparities.
- essential in assessing need for services.
- essential in allocating resources.
- essential in assessing need for immediate intervention.

Hierarchy of public health denominators



MOST COMMONLY USED PUBLIC HEALTH RAW DENOMINATORS

- **State population:**
 - At 10-year census,
 - At annual estimate.
- **County population.**
- **Zip code.**
- **Region.**
- **Census tract.**
- **Gender.**
- **Race and ethnicity.**
- **Age.**
- **Birth cohort.**
- **Women of childbearing age**

CENSUS MACRO DENOMINATORS

- United States population: 323,995,528 (4.42% of world population).
- South Dakota population: 858,469 (0.26% of US population).

COUNTY	POP	PERCENT						
Aurora	2,733	0.3%	FallRiver	6,867	0.8%	Meade	26,986	3.1%
Beadle	18,372	2.1%	Faulk	2,337	0.3%	Mellette	2,050	0.2%
Bennett	3,423	0.4%	Grant	7,142	0.8%	Miner	2,236	0.3%
BonHomme	6,985	0.8%	Gregory	4,201	0.5%	Minnehaha	185,197	21.6%
Brookings	33,897	3.9%	Haakon	1,861	0.2%	Moody	6,430	0.7%
Brown	38,785	4.5%	Hamlin	6,047	0.7%	OglalaLakota	14,373	1.7%
Brule	5,281	0.6%	Hand	3,348	0.4%	Pennington	108,702	12.7%
Buffalo	2,095	0.2%	Hanson	3,385	0.4%	Perkins	3,019	0.4%
Butte	10,283	1.2%	Harding	1,267	0.1%	Potter	2,320	0.3%
Campbell	1,397	0.2%	Hughes	17,555	2.0%	Roberts	10,311	1.2%
CharlesMix	9,383	1.1%	Hutchinson	7,301	0.9%	Sanborn	2,355	0.3%
Clark	3,659	0.4%	Hyde	1,397	0.2%	Spink	6,524	0.8%
Clay	13,964	1.6%	Jackson	3,321	0.4%	Stanley	2,954	0.3%
Codington	27,939	3.3%	Jerauld	1,997	0.2%	Sully	1,426	0.2%
Corson	4,197	0.5%	Jones	924	0.1%	Todd	9,959	1.2%
Custer	8,446	1.0%	Kingsbury	4,990	0.6%	Tripp	5,434	0.6%
Davison	19,858	2.3%	Lake	12,622	1.5%	Turner	8,209	1.0%
Day	5,539	0.6%	Lawrence	24,827	2.9%	Union	14,909	1.7%
Deuel	4,333	0.5%	Lincoln	52,849	6.2%	Walworth	5,443	0.6%
Dewey	5,685	0.7%	Lyman	3,876	0.5%	Yankton	22,702	2.6%
Douglas	2,977	0.3%	Marshall	4,769	0.6%	Ziebach	2,803	0.3%
Edmunds	3,999	0.5%	McCook	5,599	0.7%			
			McPherson	2,415	0.3%			

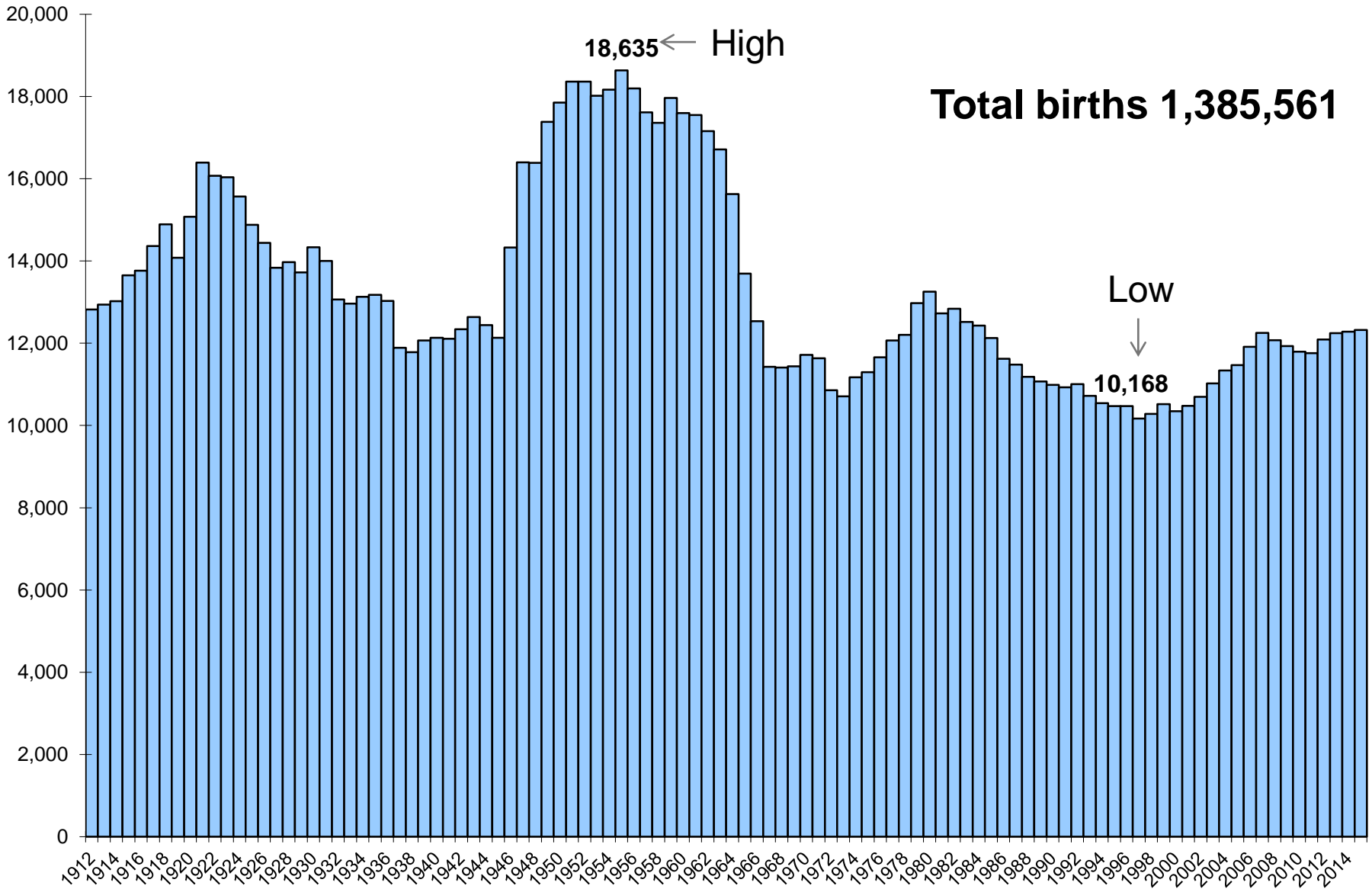
SD COUNTIES RANKED BY POPULATION

Minnehaha	185,197	Todd	9,959	Marshall	4,769	Faulk	2,337
Pennington	108,702	CharlesMix	9,383	Deuel	4,333	Potter	2,320
Lincoln	52,849	Custer	8,446	Gregory	4,201	Miner	2,236
Brown	38,785	Turner	8,209	Corson	4,197	Buffalo	2,095
Brookings	33,897	Hutchinson	7,301	Edmunds	3,999	Mellette	2,050
Codington	27,939	Grant	7,142	Lyman	3,876	Jerauld	1,997
Meade	26,986	BonHomme	6,985	Clark	3,659	Haakon	1,861
Lawrence	24,827	FallRiver	6,867	Bennett	3,423	Sully	1,426
Yankton	22,702	Spink	6,524	Hanson	3,385	Campbell	1,397
Davison	19,858	Moody	6,430	Hand	3,348	Hyde	1,397
Beadle	18,372	Hamlin	6,047	Jackson	3,321	Harding	1,267
Hughes	17,555	Dewey	5,685	Perkins	3,019	Jones	924
Union	14,909	McCook	5,599	Douglas	2,977		
OglalaLakota	14,373	Day	5,539	Stanley	2,954		
Clay	13,964	Walworth	5,443	Ziebach	2,803		
Lake	12,622	Tripp	5,434	Aurora	2,733		
Roberts	10,311	Brule	5,281	McPherson	2,415		
Butte	10,283	Kingsbury	4,990	Sanborn	2,355		

VITAL STATISTICS: NEAR PERFECT DENOMINATORS WITH FUZZY DETAILS

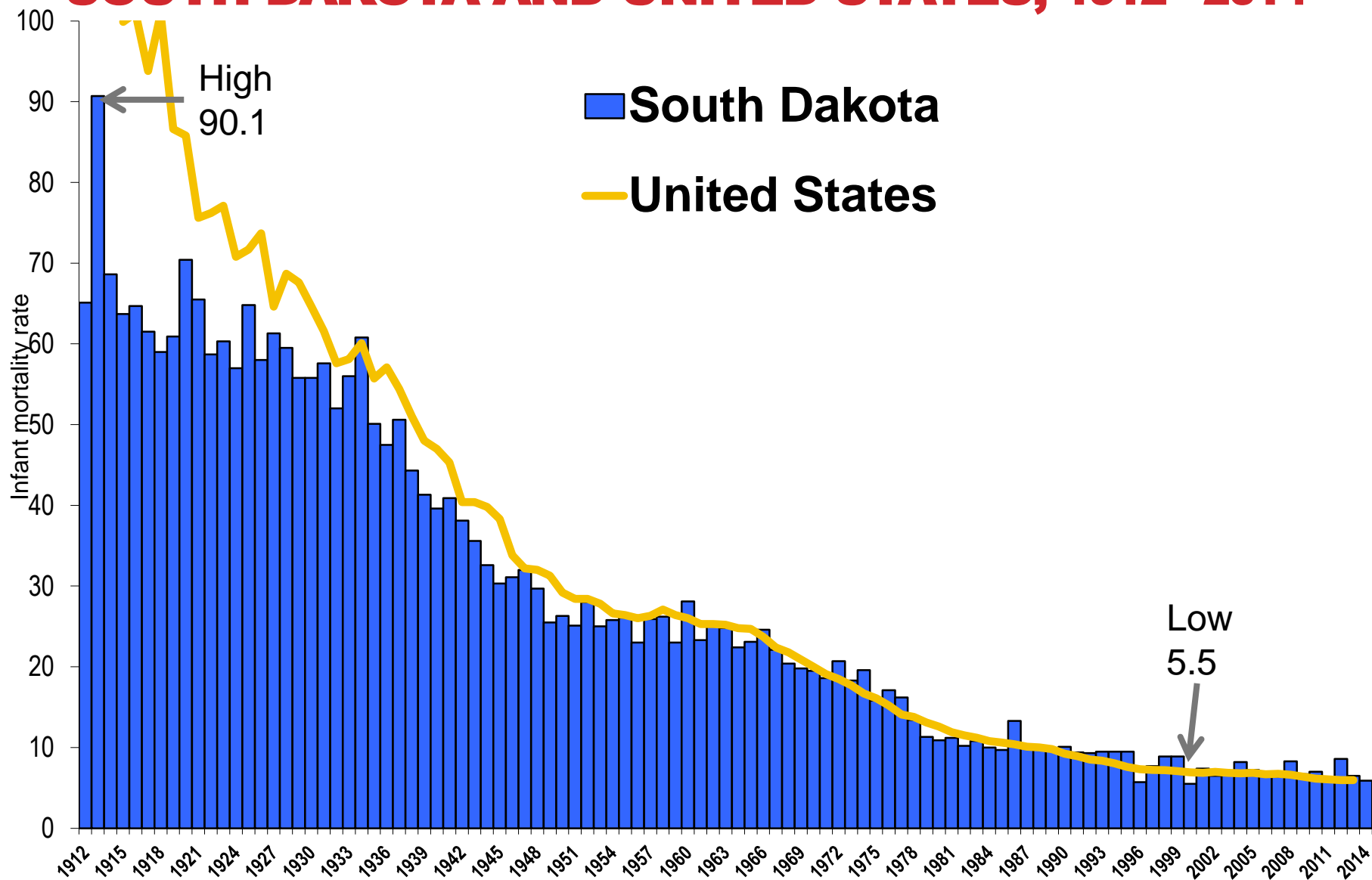
- **Birth registry**
- **Death registry**
- **Induced abortions**
- **Marriage registry**
- **Marriage registry**
- **Divorce registry**

BIRTHS BY YEAR, SOUTH DAKOTA, 1912-2015

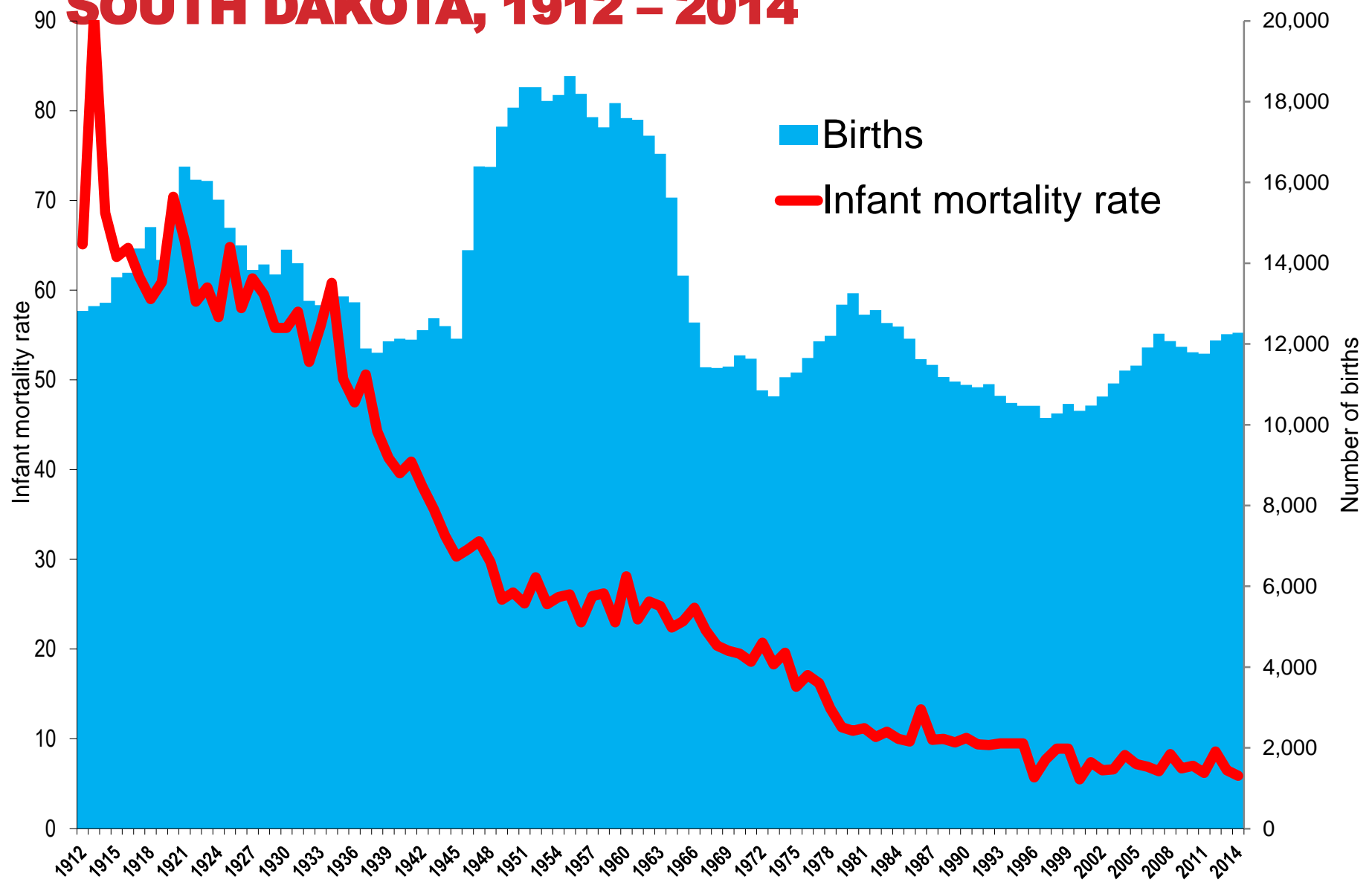


Source: SDDOH, ODSVR

INFANT MORTALITY RATES, (infant deaths per 1,000 live births) SOUTH DAKOTA AND UNITED STATES, 1912 - 2014



BIRTHS AND INFANT MORTALITY RATES*, SOUTH DAKOTA, 1912 - 2014

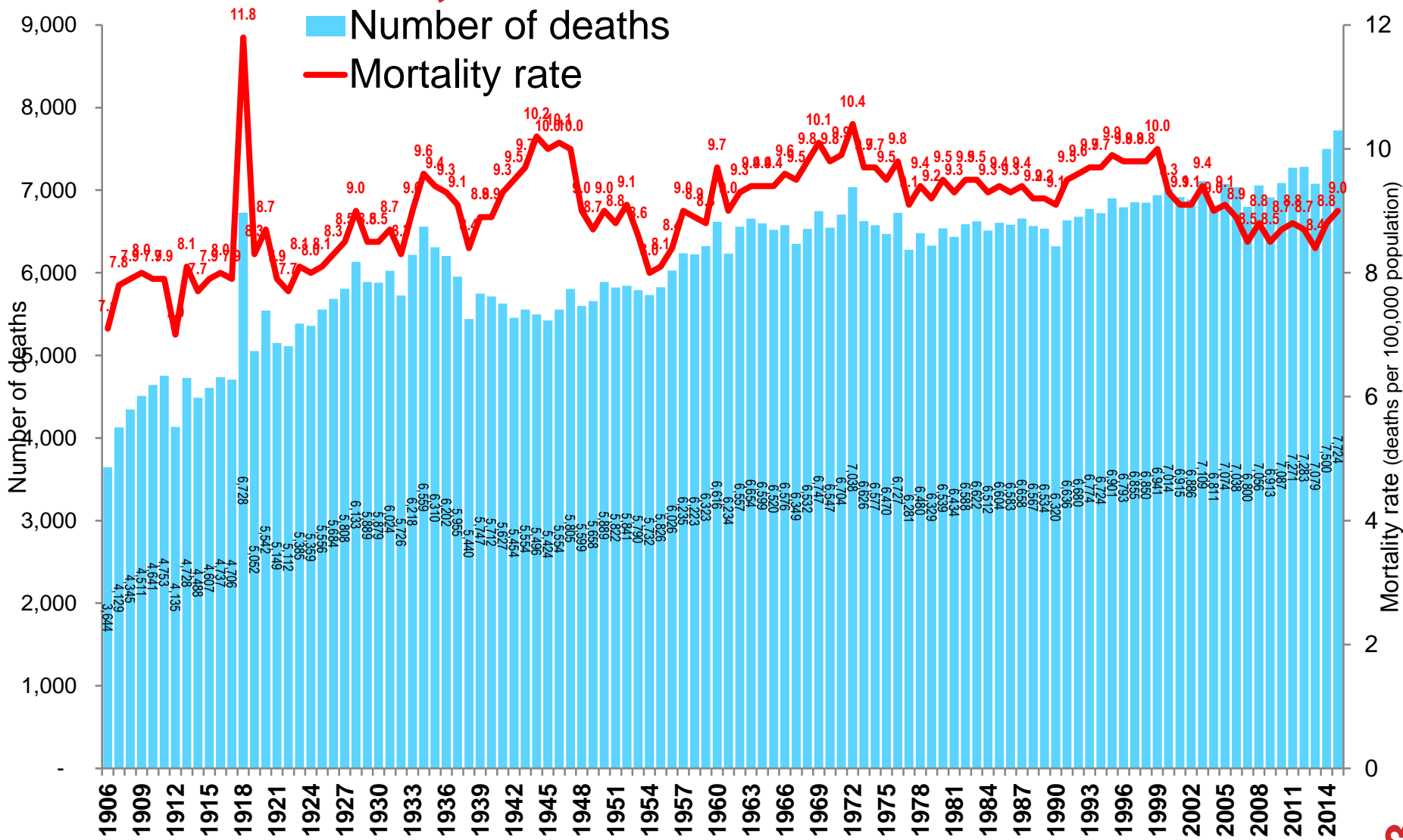


*infant deaths per 1,000 live births

INFANT MORTALITY POLICY AND PROGRAMING

- 1. Improve access to early, comprehensive prenatal care.**
- 2. Promote awareness and implementation of safe sleep practices.**
- 3. Develop community-bases systems of support for mothers and families.**
- 4. Conduct statewide education campaigns to reduce infant mortality.**
- 5. Develop resources for health professionals specific to infant mortality prevention.**
- 6. Improve data collection and analysis.**

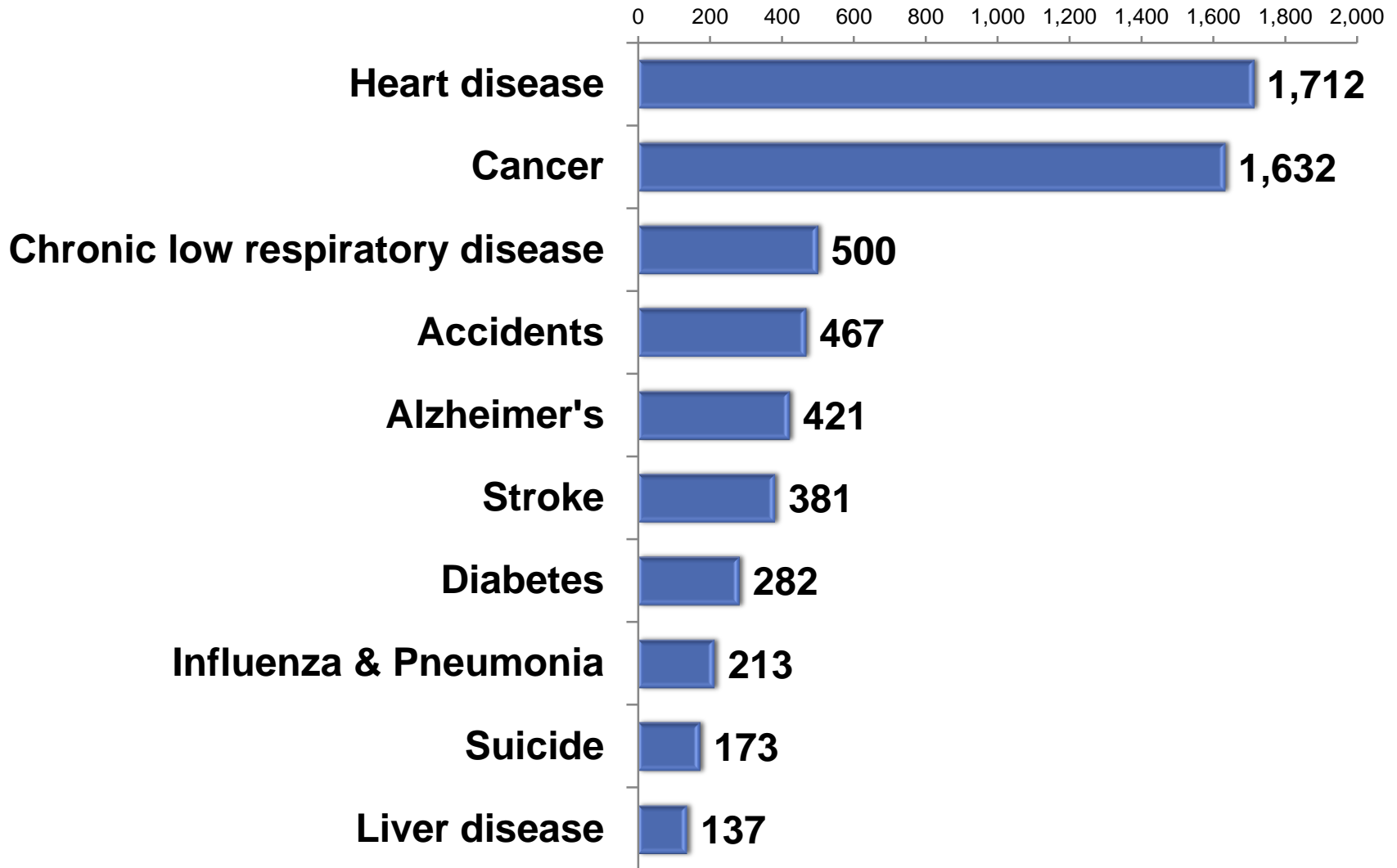
DEATHS and MORTALITY RATES (deaths per 100,000 population), SOUTH DAKOTA 1906-2015



10 LEADING CAUSES OF DEATH BY YEAR, SOUTH DAKOTA, 1994 – 2015

Rank	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1	Heart 2,275	Heart 2,273	Heart 2,187	Heart 2,124	Heart 2,102	Heart 2,016	Heart 2,105	Heart 1,984	Heart 1,933	Heart 1,942	Heart 1,775	Heart 1,764	Heart 1,743	Heart 1,623	Heart 1,677	Heart 1,778	Cancer 1,651	Cancer 1,655	Heart 1,652	Heart 1,617	Heart 1,695	Heart 1,712
2	Cancer 1,470	Cancer 1,564	Cancer 1,540	Cancer 1,548	Cancer 1,569	Cancer 1,635	Cancer 1,604	Cancer 1,598	Cancer 1,561	Cancer 1,645	Cancer 1,559	Cancer 1,610	Cancer 1,561	Cancer 1,606	Cancer 1,561	Cancer 1,506	Heart 1,611	Heart 1,615	Cancer 1,623	Cancer 1,574	Cancer 1,679	Cancer 1,632
3	Stroke 496	Stroke 533	Stroke 481	Stroke 568	Stroke 537	Stroke 544	Stroke 561	Stroke 491	Stroke 518	Stroke 475	Stroke 463	Stroke 511	Accident 443	CLRD 458	CLRD 486	CLRD 440	CLRD 451	CLRD 485	CLRD 479	Accident 424	Accident 461	CLRD 500
4	Accident 303	CLRD 325	Accident 339	CLRD 337	Accident 347	Accident 340	CLRD 387	Accident 382	CLRD 382	Accident 390	Accident 407	CLRD 440	Stroke 437	Stroke 408	Alzheimer 401	Stroke 417	Stroke 411	Stroke 442	Alzheimer 462	Alzheimer 420	CLRD 440	Accident 467
5	CLRD 298	Accident 313	CLRD 294	Accident 300	CLRD 315	CLRD 338	Accident 318	CLRD 360	Accident 344	CLRD 379	CLRD 393	Accident 396	CLRD 375	Accident 357	Stroke 391	Alzheimer 402	Alzheimer 401	Alzheimer 423	Accident 417	Stroke 414	Stroke 439	Alzheimer 421
6	I & P 284	I & P 313	I & P 287	I & P 268	I & P 283	I & P 262	I & P 208	Diabetes 210	I & P 239	I & P 223	Alzheimer 255	Alzheimer 289	Alzheimer 330	Alzheimer 345	Accident 372	Accident 348	Accident 391	Accident 407	Stroke 410	CLRD 413	Alzheimer 433	Stroke 381
7	Diabetes 178	Diabetes 169	Diabetes 180	Diabetes 195	Diabetes 210	Diabetes 195	Alzheimer 180	I & P 186	Diabetes 193	Diabetes 201	Diabetes 227	I & P 242	Diabetes 261	Diabetes 246	Diabetes 216	Diabetes 200	Diabetes 241	Diabetes 267	Diabetes 219	Diabetes 239	Diabetes 223	Diabetes 282
8	Suicide 98	Suicide 86	Suicide 126	Suicide 126	Suicide 115	Alzheimer 156	Diabetes 179	Alzheimer 159	Alzheimer 169	Alzheimer 175	I & P 180	Diabetes 239	I & P 173	I & P 189	I & P 186	I & P 135	I & P 166	I & P 178	I & P 188	I & P 186	I & P 180	I & P 213
9	Liver 86	Kidney 76	Alzheimer 78	Senility 88	Kidney 93	Suicide 103	Kidney 130	Mental 135	Mental 144	Mental 159	Suicide 114	Suicide 123	Suicide 125	Suicide 101	Suicide 123	Suicide 128	Suicide 139	Suicide 125	Suicide 135	Suicide 147	Suicide 141	Suicide 173
10	Kidney 83	Liver 76	Mental 74	Kidney 75	Senility 77	Kidney 99	Suicide 95	Suicide 108	Kidney 128	Kidney 131	Liver 97	Liver 83	Liver 83	Liver 94	Liver 100	Kidney 99	EHPRD 93	Dementia 117	Liver 113	Liver 121	Liver 128	Liver 137
Total	6,724	6,901	6,793	6,855	6,850	6,941	7,014	6,915	6,886	7,109	6,811	7,074	7,038	6,800	7,056	6,913	7,087	7,287	7,283	7,079	7,500	7,724

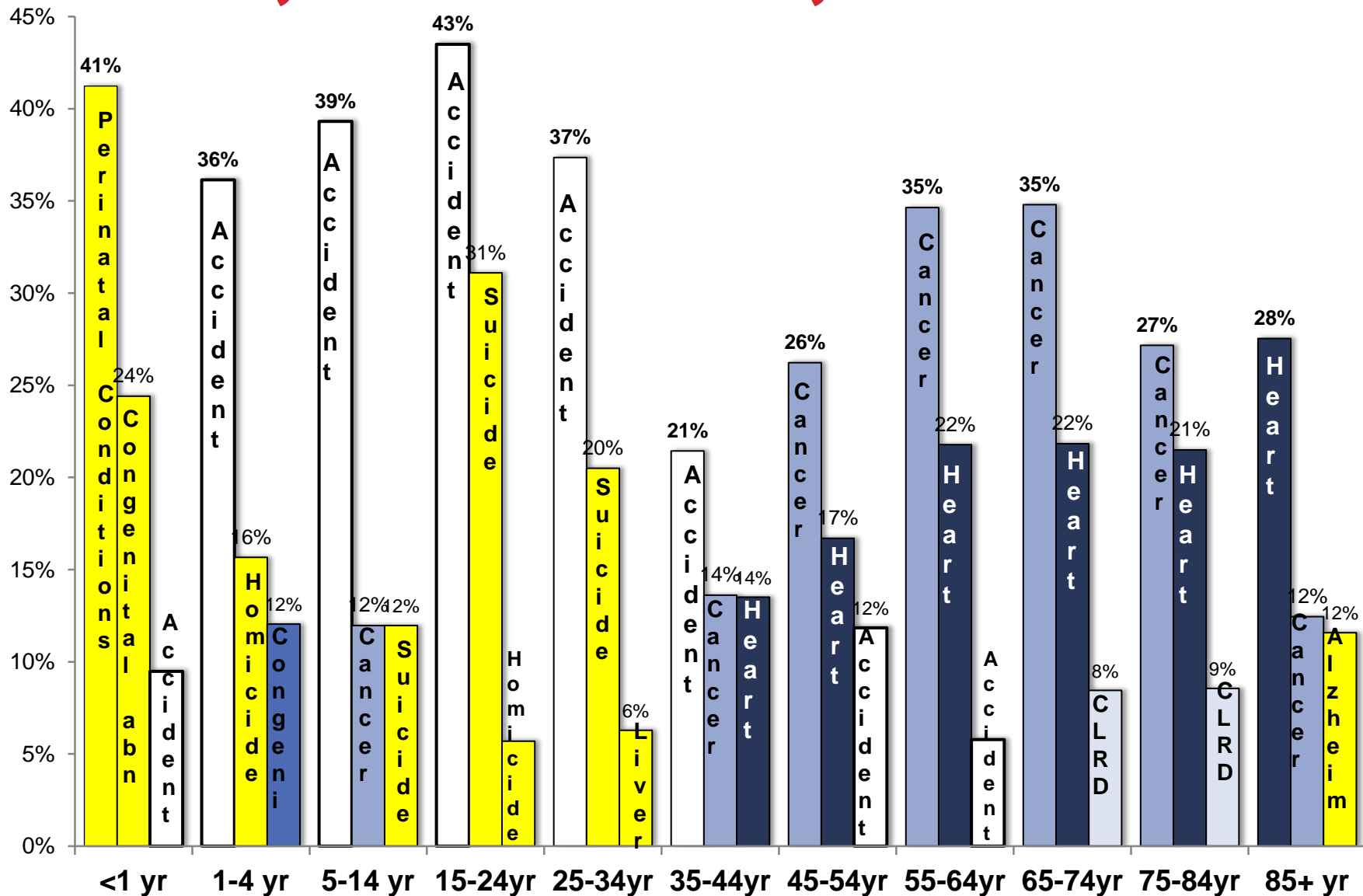
10 LEADING CAUSES OF DEATH, SOUTH DAKOTA, 2015 (N=7,724)



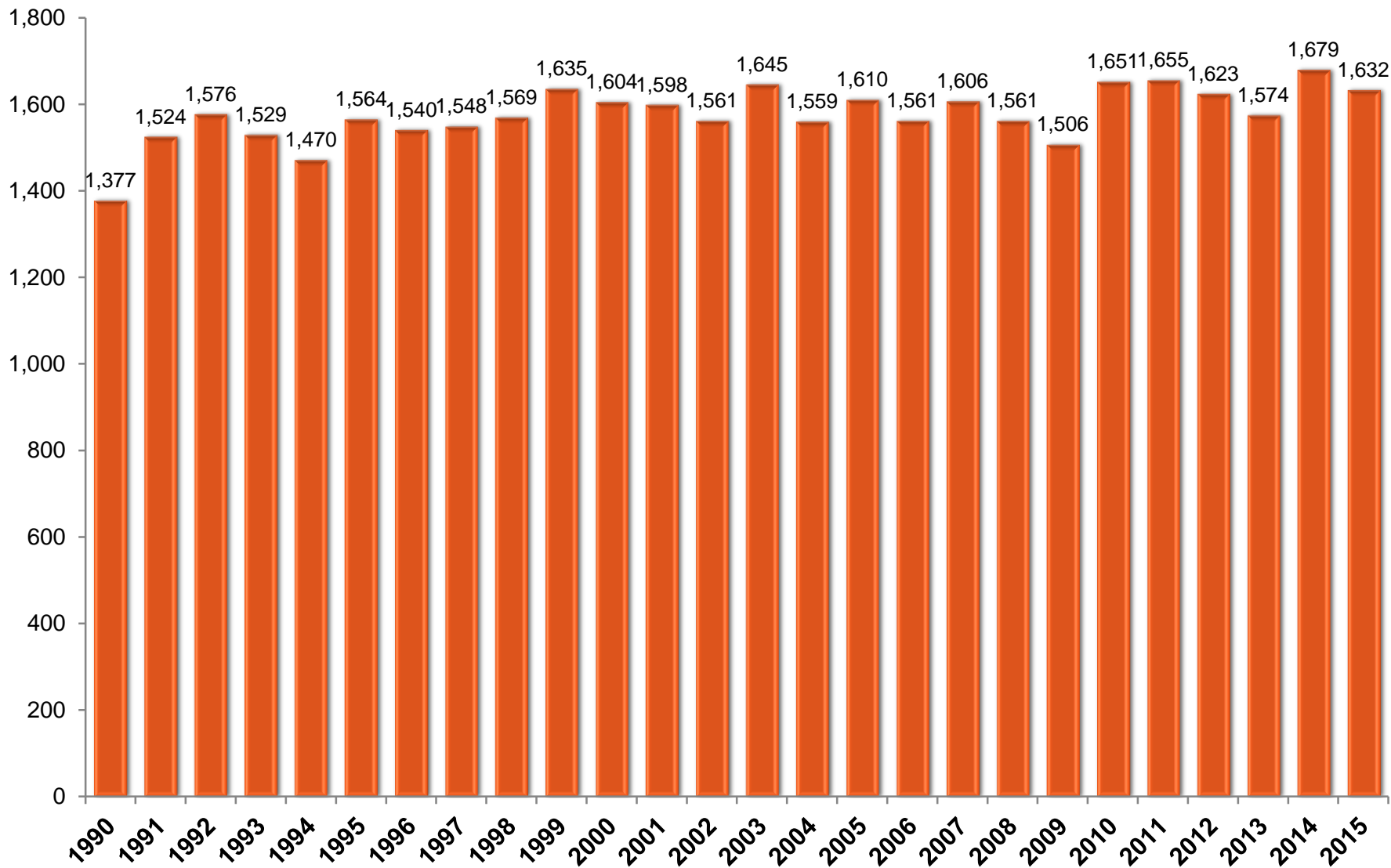
10 LEADING CAUSES OF DEATH BY AGE, SOUTH DAKOTA, 2011 – 2015

		Age Groups											
		<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	Total
Rank	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
1	Conditions originating perinatal per. 174	Accidents 30	Accidents 46	Accidents 214	Accidents 226	Accidents 200	Cancer 567	Cancer 1,403	Cancer 1,924	Cancer 2,360	Heart disease 3,792	Heart disease 8,291	
2	Congenital abnormalities 103	Homicide 13	Cancer 14	Suicide 153	Suicide 124	Cancer 127	Heart disease 361	Heart disease 882	Heart disease 1,207	Heart disease 1,867	Cancer 1,714	Cancer 8,164	
3	Accidents 40	Congenital abnormalities 10	Suicide 14	Homicide 28	Liver disease 38	Heart disease 126	Accidents 256	Accidents 234	Chron. low resp. disease 467	Chron. low resp. disease 743	Alzheimer's disease 1,594	Chron. low resp. disease 2,317	
4	SIDS 39	Cancer 7	Influenza & pneumonia 5	Cancer 26	Heart disease 35	Liver disease 116	Liver disease 161	Chron. low resp. disease 201	Diabetes 247	Stroke 570	Stroke 1,119	Accidents 2,176	
5	Unknown causes 17	Unknown causes 6	Congenital abnormalities 5	Heart disease 14	Cancer 22	Suicide 112	Suicide 140	Diabetes 193	Stroke 212	Alzheimer's disease 457	Chron. low resp. disease 847	Alzheimer's disease 2,159	
6	Influenza & pneumonia 9	Influenza & pneumonia 3	Homicide 4	Diabetes 7	Homicide 19	Diabetes 35	Diabetes 85	Liver disease 145	Accidents 158	Accidents 300	Influenza & pneumonia 561	Stroke 2,086	
7	Homicide 8	Bronchitis 2	Septicemia 3	Undetermined intent 5	Diabetes 14	Stroke 17	Chron. low resp. disease 55	Stroke 110	Alzheimer's disease 88	Diabetes 289	Accidents 472	Diabetes 1,230	
8	Other metabolic disorders 6	Undetermined intent 2	Heart disease 3	Cerebral palsy 5	Pregnancy & childbirth 11	Homicide 17	Stroke 50	Suicide 110	Liver disease 83	Influenza & pneumonia 181	Unspecified dementia 412	Influenza & pneumonia 945	
9	Other viral diseases 3		Cerebral palsy 3	Paroxysmal disorders 4	Undetermined intent 10	Septicemia 16	Alcohol use 50	Septicemia 58	Influenza & pneumonia 81	Parkinson's disease 158	Diabetes 359	Suicide 721	
10	Heart disease 3		Other viral diseases 2	Influenza & pneumonia 4	Influenza & pneumonia 9	Undetermined intent 13	Septicemia 32	Influenza & pneumonia 49	Kidney disease 58	Unspecified dementia 126	Hypertension 288	Liver disease 597	
	All other 20	All other 10	All other 18	All other 32	All other 97	All other 154	All other 405	All other 665	All other 1,004	All other 1,636	All other 2,613	All other 8,165	

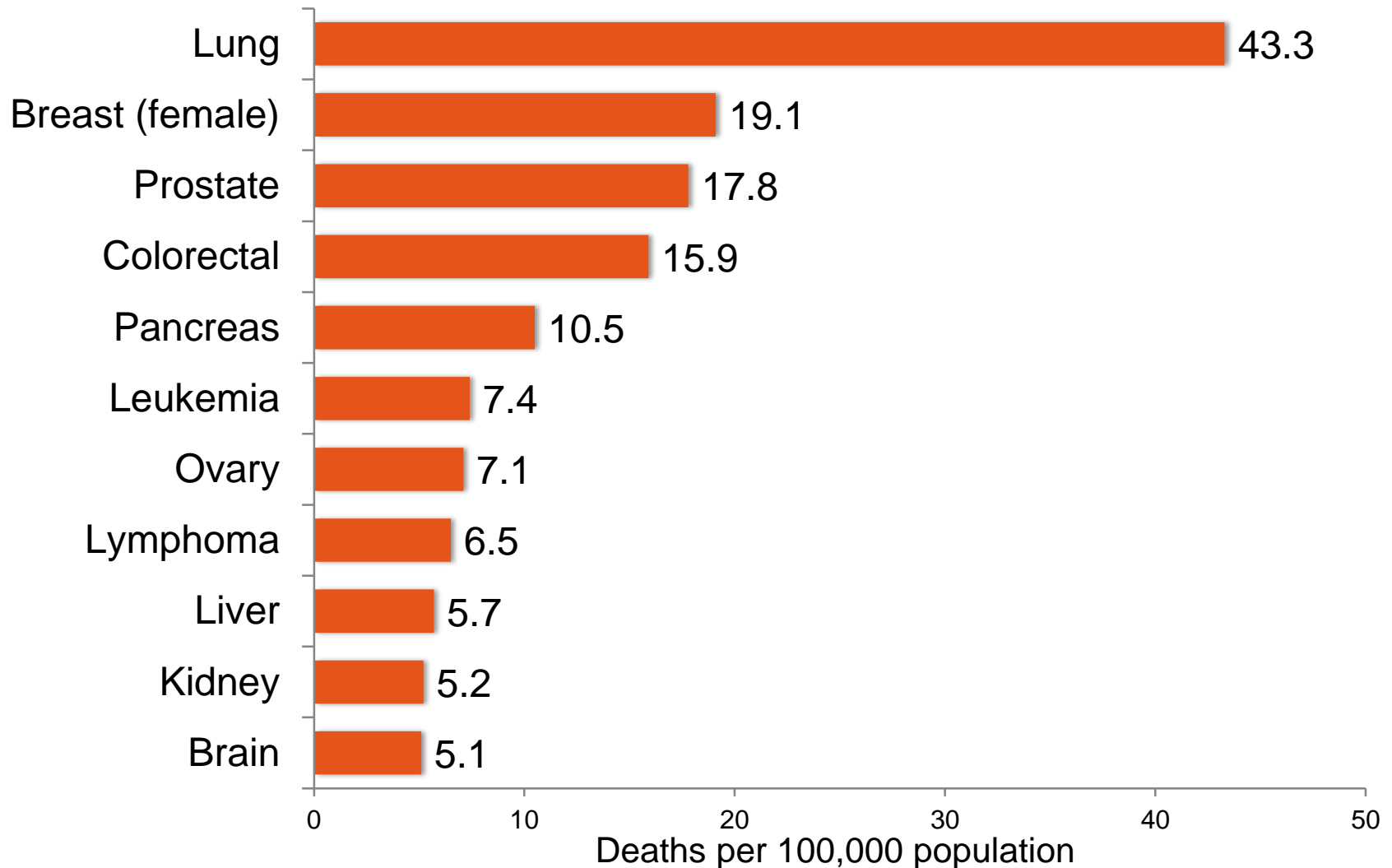
3 LEADING CAUSES OF DEATH BY AGE GROUP, SOUTH DAKOTA, 2011-2015



CANCER DEATHS, SOUTH DAKOTA 1990-2015



CANCER LEADING MORTALITY RATES (age-adjusted), SOUTH DAKOTA, 2012



TARGET GROUP DENOMINATORS: CANCER PATIENTS

Female Breast Cancer Cases and Incidence Rates, United States and South Dakota, 2001-2013

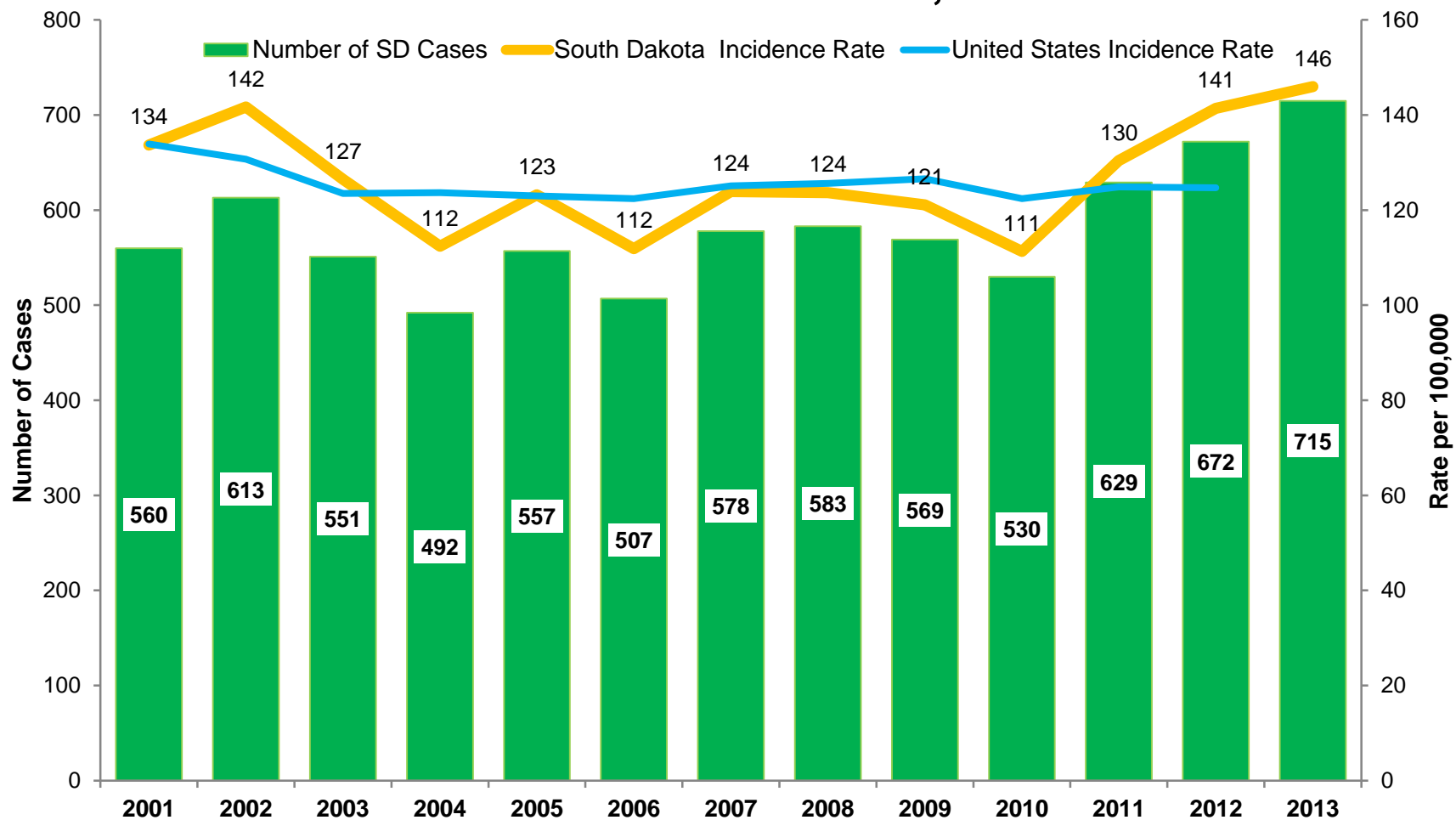


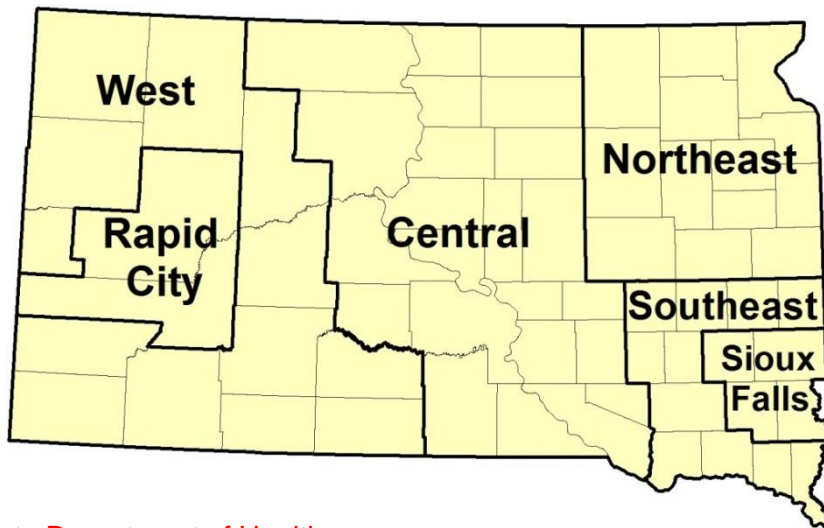
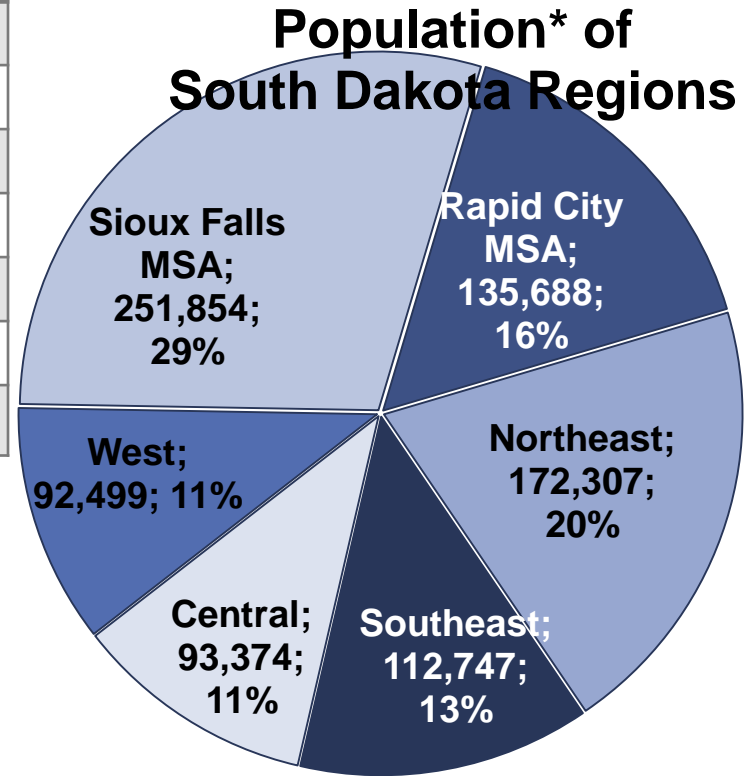
Figure by Ashley Miller (SD-DOH)

South Dakota infectious disease summary 2016

Disease/Agent	Cases year-to-date	Rate (cases per 100,000 population)	5-yr median cases (2011-2015)	Percent change
Campylobacter	112	13.0	54	+107%
Chlamydia	1,466	170.8	1,334	+10%
Cryptosporidiosis	45	5.2	31	+45%
<i>E. coli</i>, shiga toxin-producing	12	1.4	6	+100%
Giardiasis	31	3.6	26	+19%
Gonorrhea	415	48.3	238	+74%
Hepatitis C	255	29.7	135	+89%
HIV, including Stage III (AIDS)	9	1.0	7	+29%
MRSA, invasive	53	6.2	35	+51%
Pertussis	6	0.7	6	0%
Rabies, animal	4	0.5	10	-60%
Salmonella	53	6.2	44	+20%
Shigella	6	0.7	2	+200%
Syphilis, early	14	1.6	6	+133%
Tuberculosis	5	0.6	4	+25%
Zika	0	0.0	0	- - -

South Dakota Regions

Region	Population	%	Area (sq miles)	Density (people per sq mile)
Sioux Falls MSA*	251,854	29.3%	3,141	80.2
Rapid City MSA*	135,688	15.8%	6,247	21.7
Northeast	172,307	20.1%	12,277	14.0
Southeast	112,747	13.1%	5,863	19.2
Central	93,374	10.9%	24,860	3.8
West	92,499	10.8%	23,508	3.9
South Dakota	858,469	100%	75,896	11.3

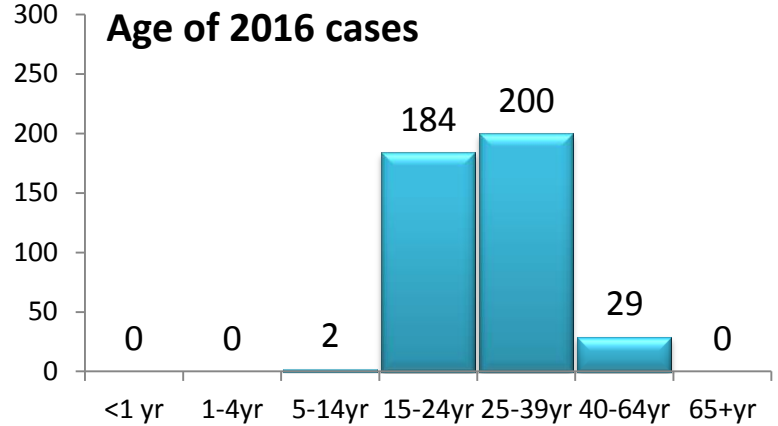


*US Census Bureau, 2015 population estimate

Gonorrhea

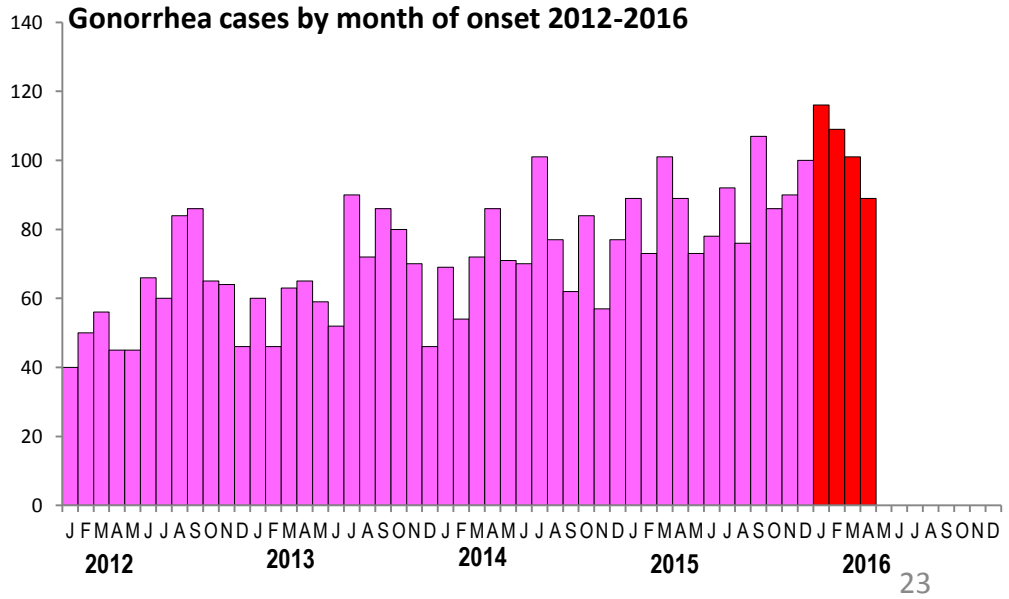
Symptoms vary depending on what part of the body is infected (anus, eyes, mouth, genitals, or throat). Gonorrhea can impact a one’s ability to have children if left untreated.

Regions	Cases	Rate†
Sioux Falls MSA	123	48.8
Rapid City MSA	87	64.1
Northeast	19	11.0
Southeast	19	16.9
Central	76	81.4
West	90	97.3
South Dakota	415	48.3

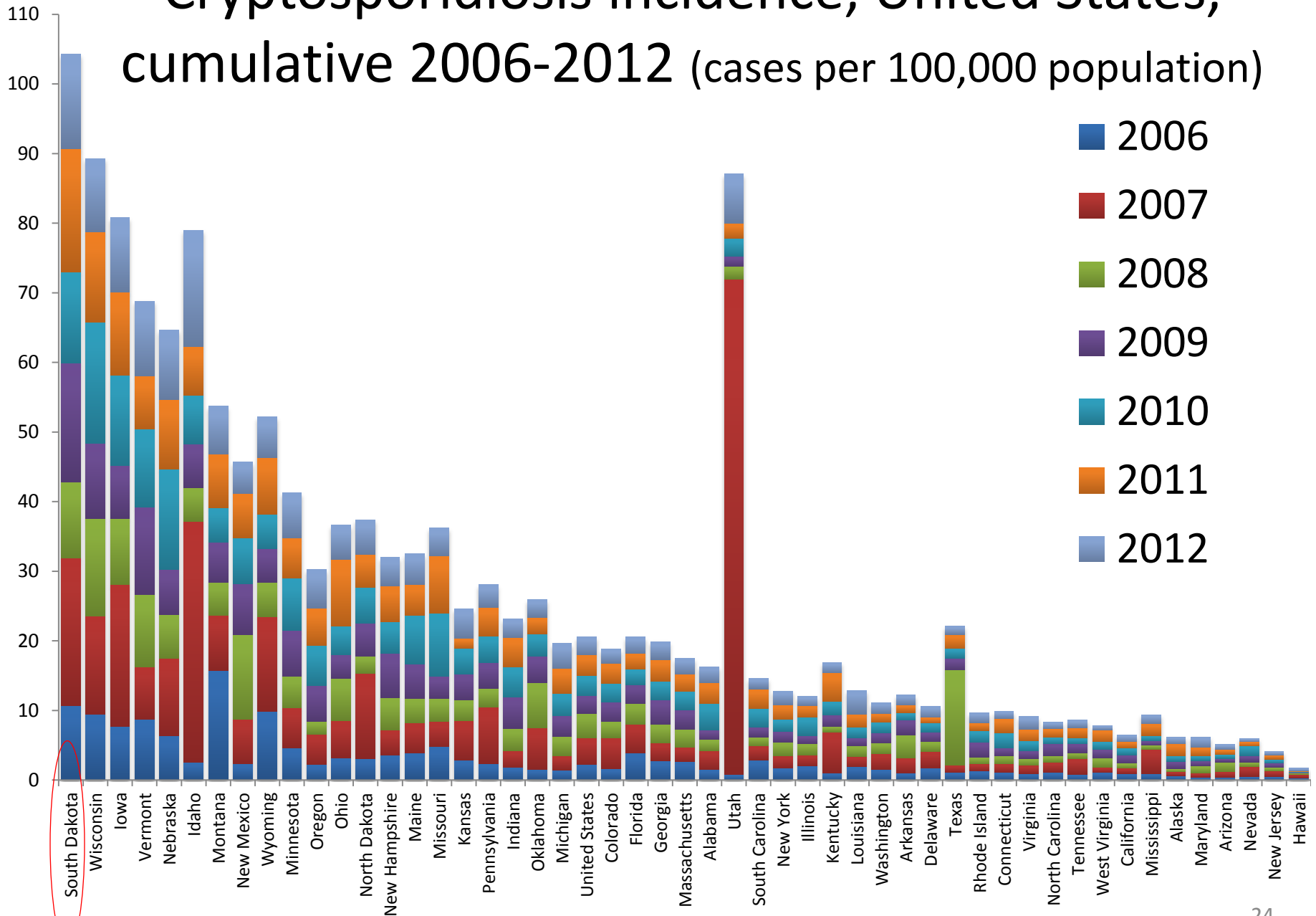


†Rate: cases per 100,000 population.
MSA: Metropolitan Statistical Area.

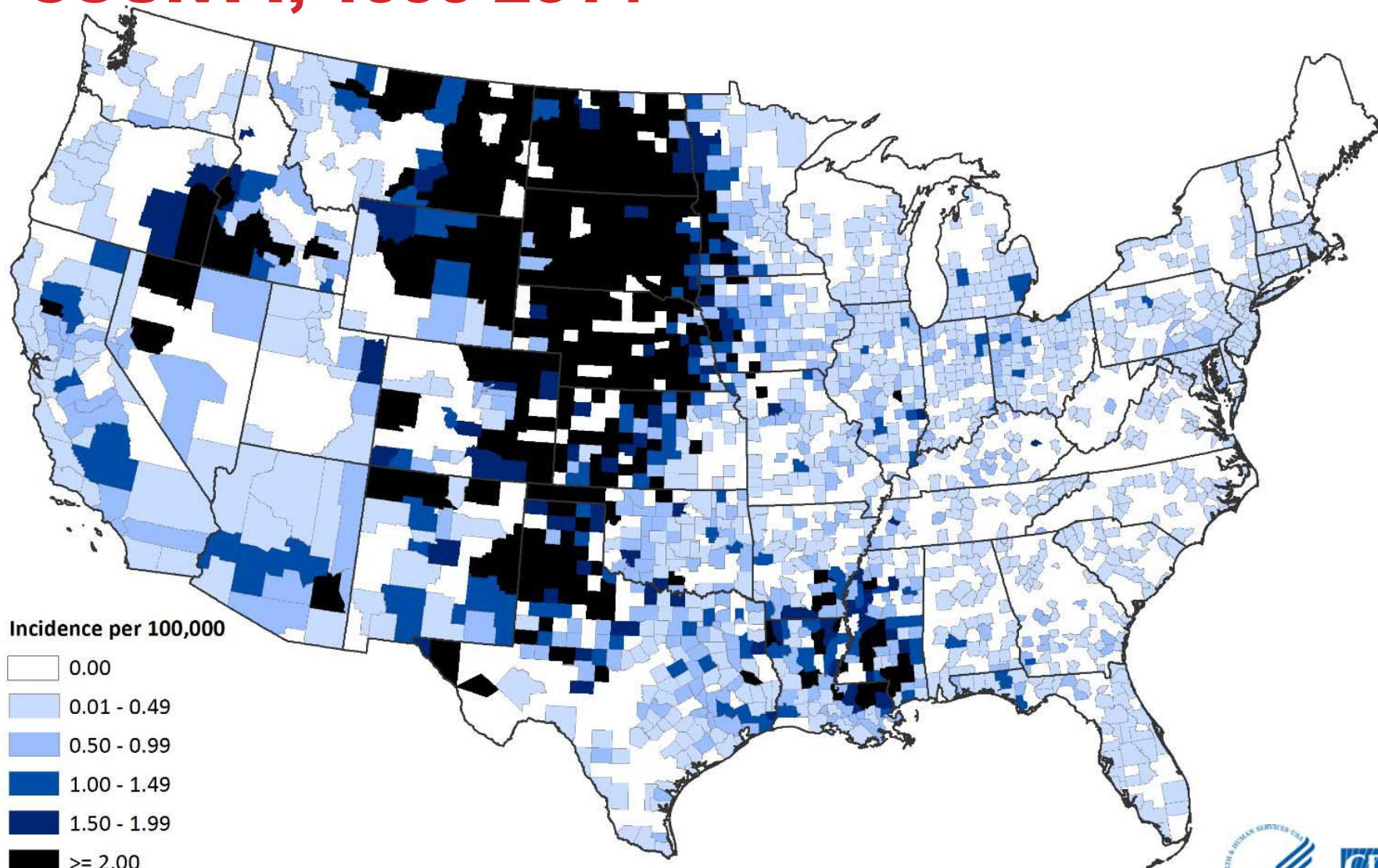
Counties with cases: Beadle*, Bennett*, Brookings*, Brown 7, Brule*, Buffalo 8, Charles Mix 19, Clay 7, Corson 7, Custer*, Davison 6, Day*, Dewey 19, Fall River*, Hughes 11, Hutchinson*, Jackson*, Kingsbury*, Lawrence*, Lincoln*, Lyman 11, Meade 6, Mellette*, Minnehaha 120, Moody*, Oglala Lakota 31, Pennington 81, Roberts*, Todd 36, Union*, Yankton*, Ziebach 7 (*counties with <5 cases).



Cryptosporidiosis incidence, United States, cumulative 2006-2012 (cases per 100,000 population)

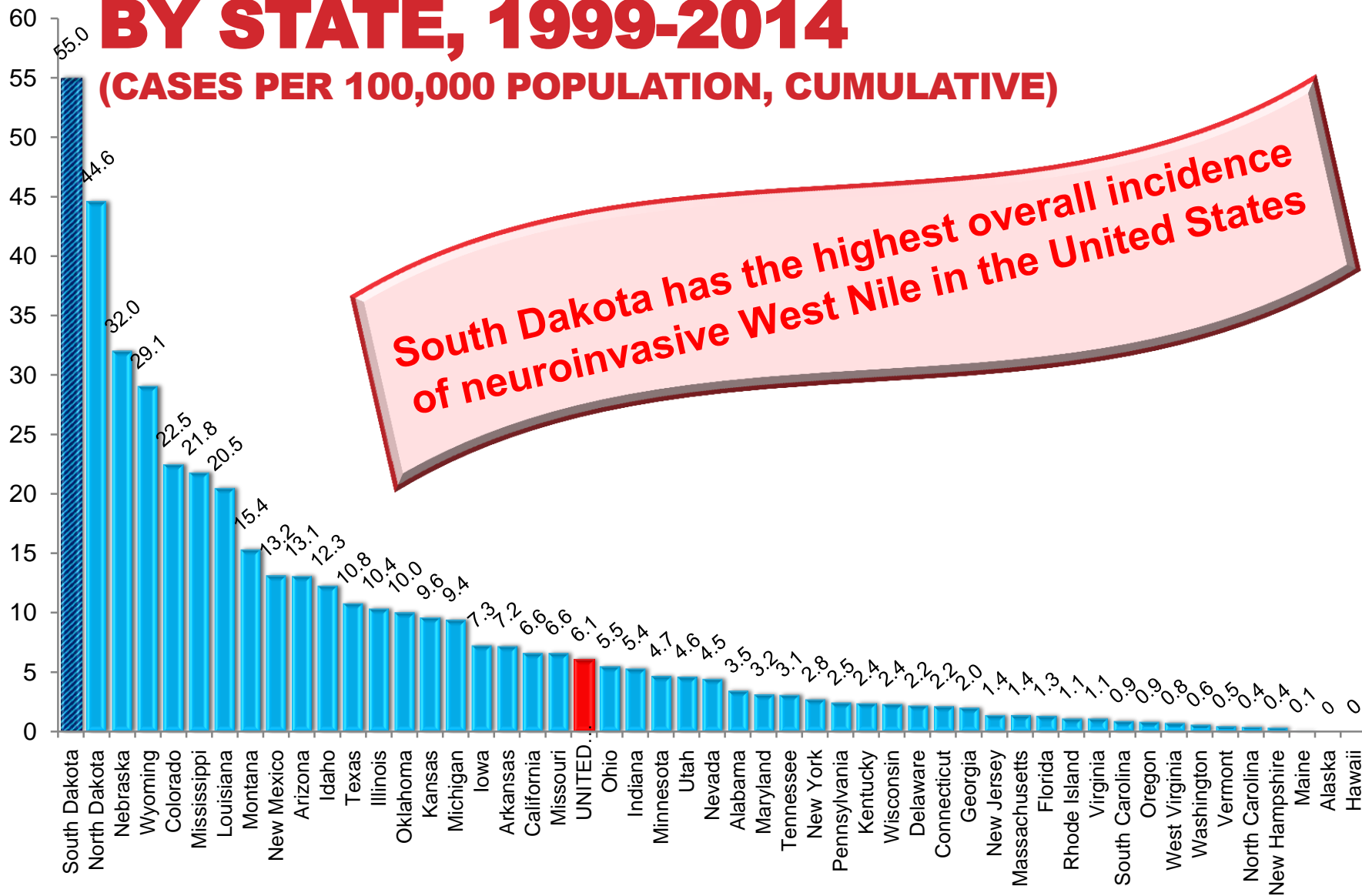


AVERAGE ANNUAL INCIDENCE OF WEST NILE VIRUS NEUROINVASIVE DISEASE BY COUNTY, 1999-2014



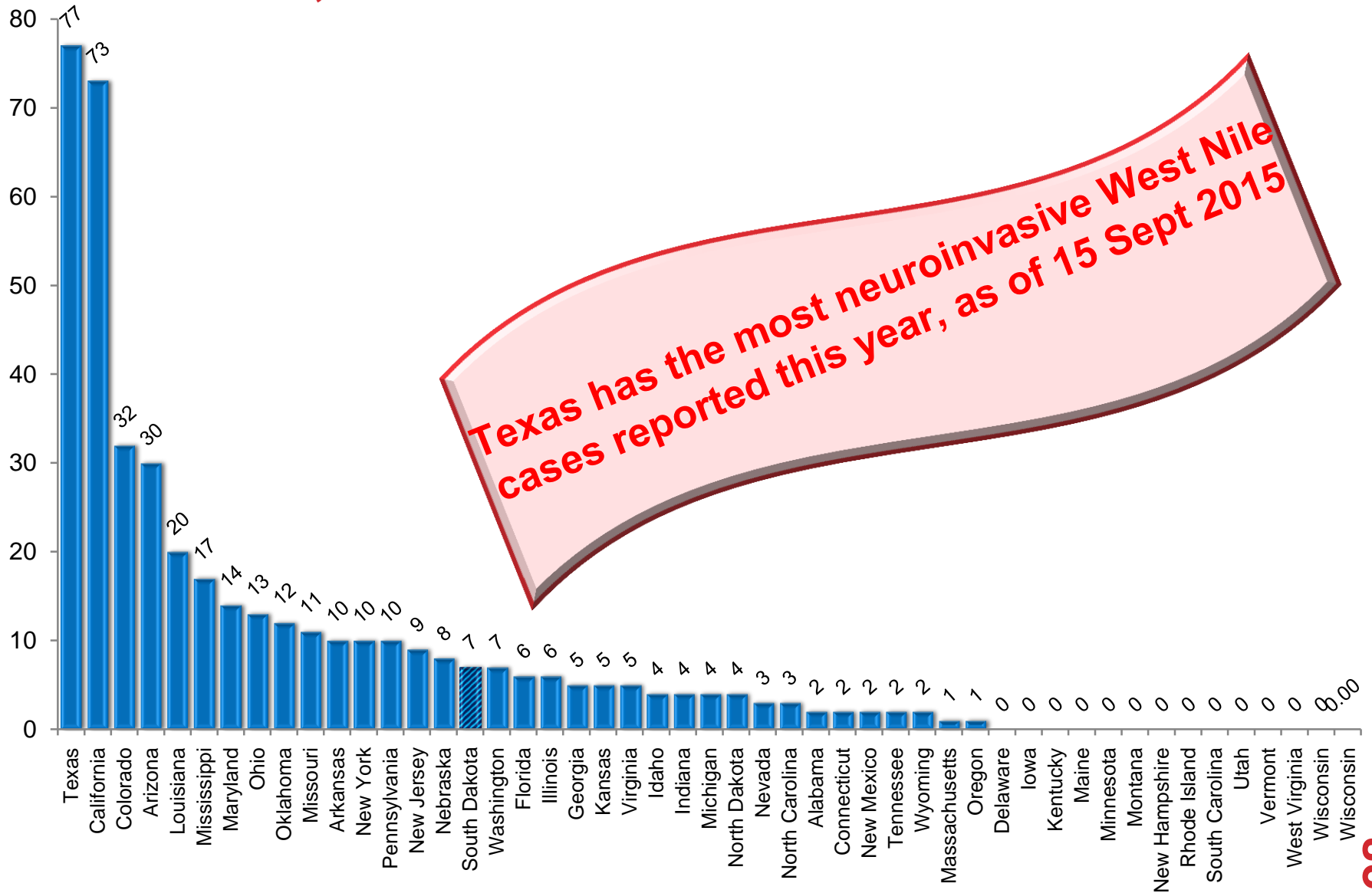
WEST NILE VIRUS NEUROINVASIVE DISEASE CUMULATIVE INCIDENCE BY STATE, 1999-2014

(CASES PER 100,000 POPULATION, CUMULATIVE)



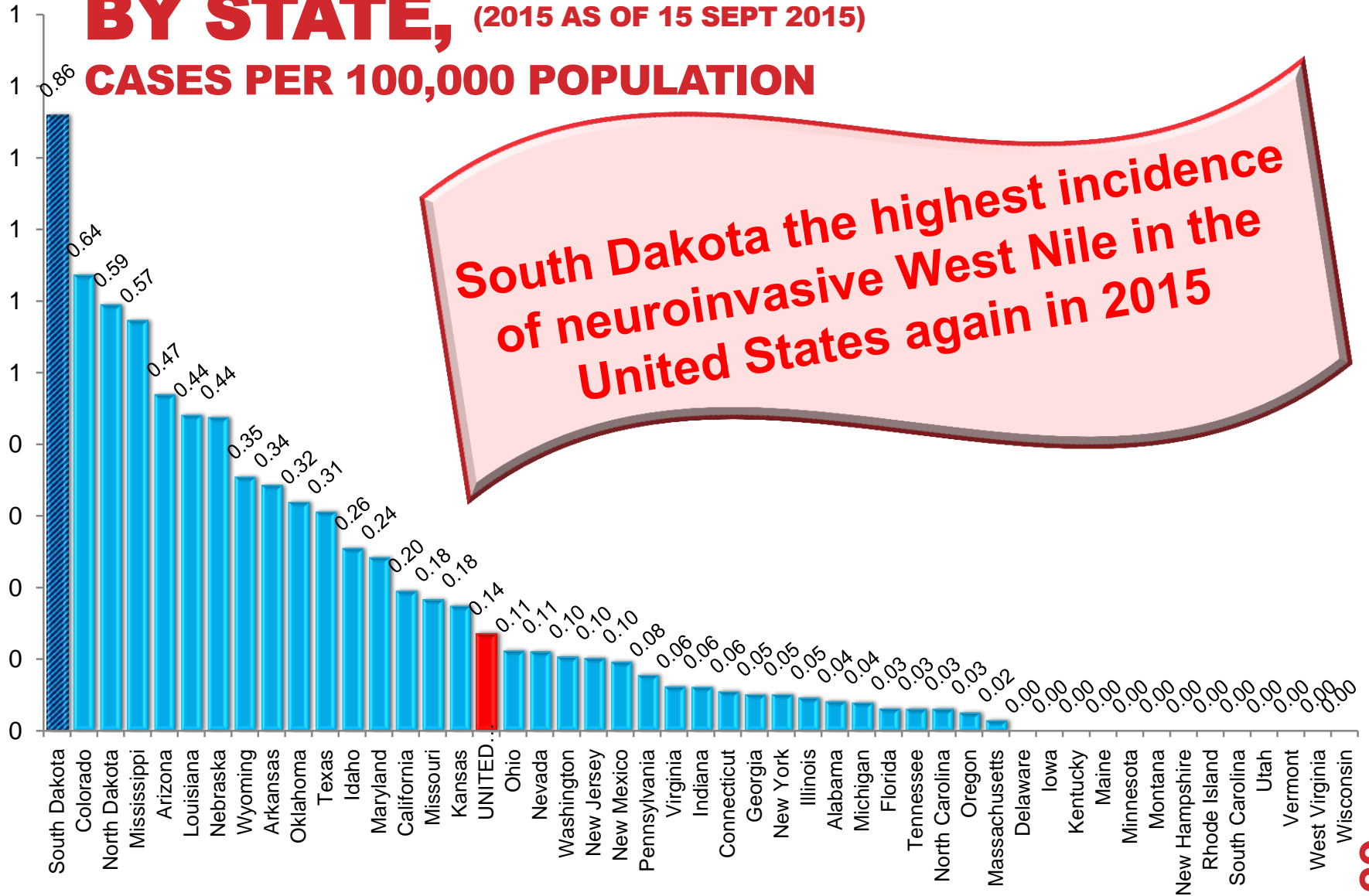
2015 WEST NILE VIRUS NEUROINVASIVE CASES REPORTED BY STATE (TOTAL 422), (2015 AS OF 15 SEPT 2015)

CASES PER 100,000 POPULATION



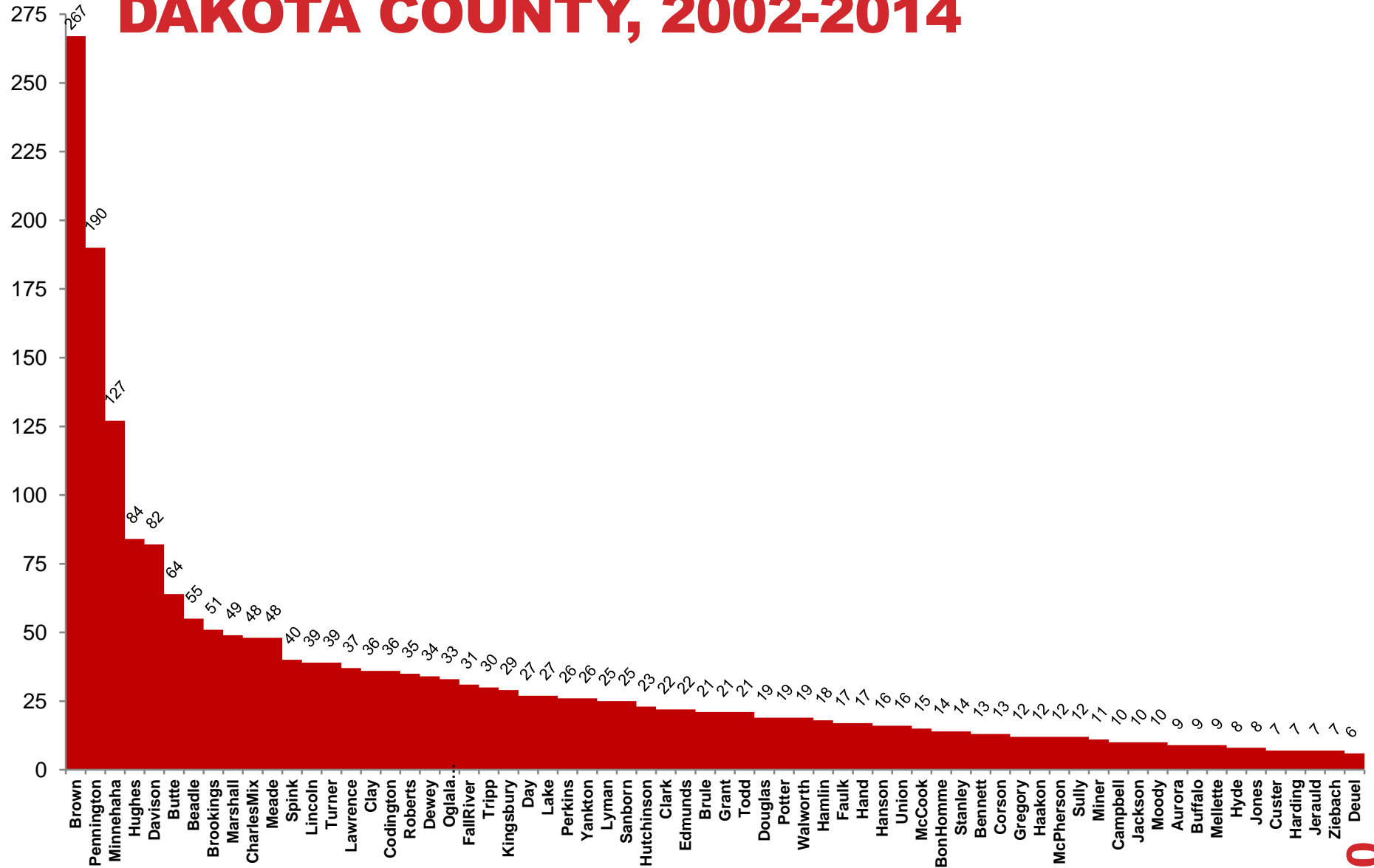
2015 WEST NILE VIRUS NEUROINVASIVE DISEASE INCIDENCE BY STATE, (2015 AS OF 15 SEPT 2015)

CASES PER 100,000 POPULATION



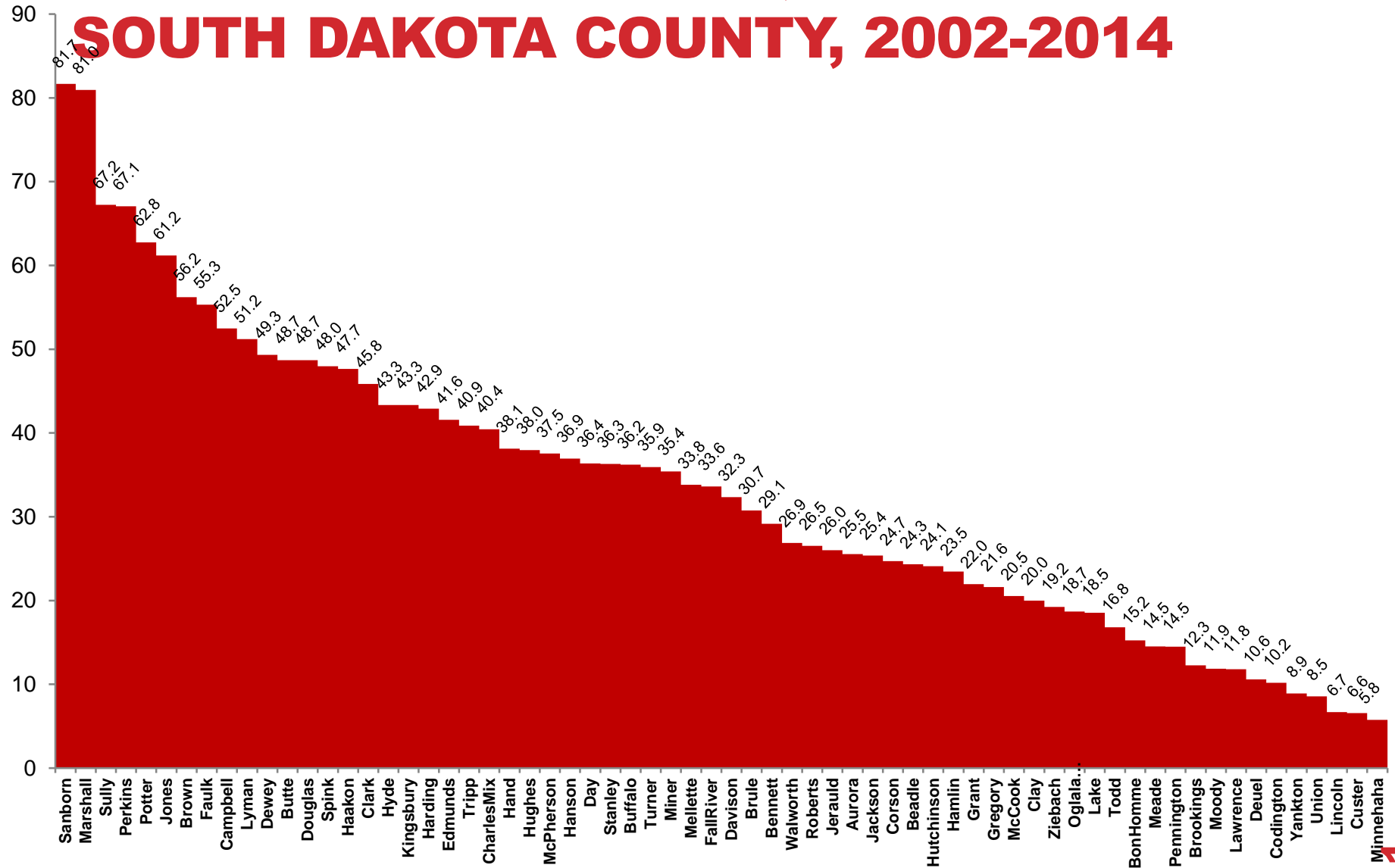
South Dakota the highest incidence of neuroinvasive West Nile in the United States again in 2015

WEST NILE VIRUS CASES BY SOUTH DAKOTA COUNTY, 2002-2014



WEST NILE VIRUS AVERAGE ANNUAL INCIDENCE, (cases per 100,000 per year)

SOUTH DAKOTA COUNTY, 2002-2014



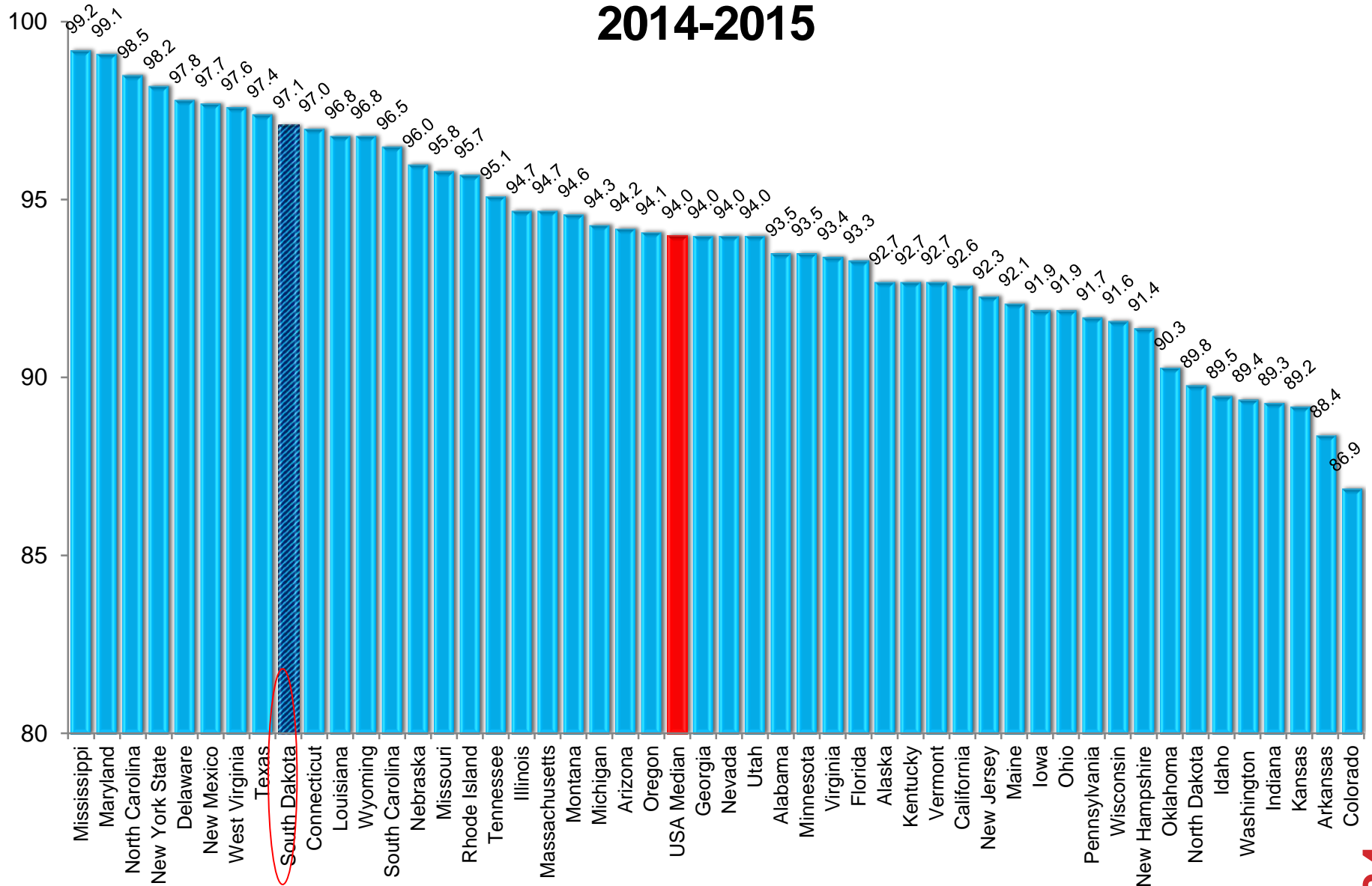
2015 STATE AWARDS \$500,000 IN COMMUNITY MOSQUITO CONTROL GRANTS

1. Altamont Inc. \$750
2. Big Stone City \$2,239
3. Brown County \$16,435
4. Camp Crook \$751
5. Cheyenne R Sioux Tribe \$8,777
6. Aberdeen \$20,000
7. Alexandria \$2,452
8. Arlington \$1,183
9. Armour \$2,241
10. Aurora \$1,179
11. Avon \$968
12. Baltic \$1,185
13. City Belle Fourche \$7,900
14. Beresford \$689
15. Bonesteel \$965
16. Brandon \$1,360
17. Britton \$7,970
18. Brookings \$5,945
19. Bruce \$2,024
20. Bryant \$1,179
21. Canistota \$1,605
22. Canton \$2,053
23. Carthage \$963
24. Centerville \$2,243
25. Chamberlain \$2,894
26. Clark \$2,669
27. Clear Lake \$763
28. Colman \$1,180
29. Colome \$1,389
30. Conde \$963
31. Crooks \$1,399
32. Dante \$1,175
33. Davis \$1,599
34. De Smet \$4,365
35. Deadwood \$1,187
36. Doland \$964
37. Dupree \$2,239
38. Eagle Butte \$5,215
39. Edgemont \$2,878
40. Egan \$965
41. Elk Point \$1,000
42. Emery \$1,390
43. Estelline \$970
44. Faith \$1,602
45. Faulkton \$2,665
46. Flandreau \$2,045
47. Fort Pierre \$3,739
48. Freeman \$1,611
49. Fulton \$1,387
50. Gary \$1,388
51. Geddes \$1,600
52. Gregory \$1,611
53. Groton \$5,005
54. Harrisburg \$1,851
55. Hartford \$3,743
56. Herreid \$2,026
57. Highmore \$2,454
58. Hosmer \$964
59. Howard \$1,819
60. Hurley \$1,814
61. Huron \$8,182
62. Ipswich \$3,516
63. Irene \$1,390
64. Kimball \$1,817
65. Lake Andes \$3,091
66. Lake Norden \$1,603
67. Lemon \$2,670
68. Madison \$3,033
69. Marion \$1,182
70. Martin \$3,093
71. McIntosh \$1,176
72. Menno \$1,392
73. Milbank \$2,904
74. Miller \$3,521
75. Mission \$3,094
76. Mitchell \$ 20,000
77. Mobridge \$3,753
78. New Witten \$751
79. Northville \$1,599
80. Onida \$2,877
81. Parker \$2,244
82. Parkston \$1,983
83. Philip \$2,878
84. Pierre \$ 10,000
85. Presho \$2,027
86. Redfield \$5,013
87. Roscoe \$1,389
88. Salem \$2,035
89. Scotland \$1,394
90. Selby \$1,604
91. Sinai \$963
92. Sioux Falls \$20,000
93. Sisseton \$3,955
94. Springfield \$982
95. Sturgis \$4,730
96. Tea \$2,484
97. Timber Lake \$2,450
98. Tripp \$1,180
99. Tyndall \$1,185
100. Valley Springs \$758
101. Veblen \$967
102. Vermillion \$4,770
103. Viborg \$2,878
104. Wagner \$2,090
105. Wall \$2,030
106. Watertown \$7,635
107. Waubay \$2,028
108. Webster \$3,949

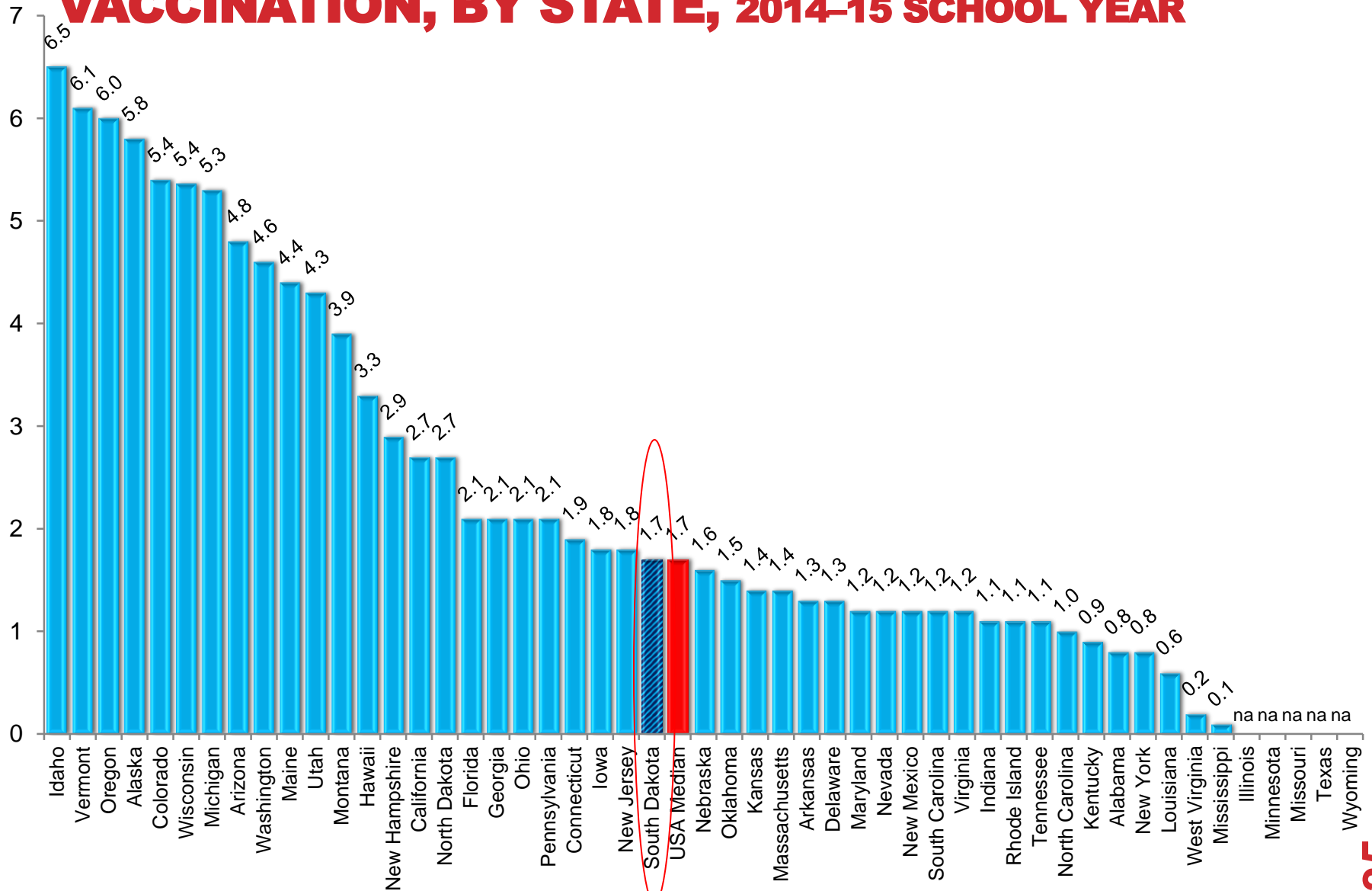
2015 STATE AWARDS \$500,000 IN COMMUNITY MOSQUITO CONTROL GRANTS

109. Wessington Springs \$1,820
110. Westport \$2,659
111. White Lake \$1,390
112. White River \$2,028
113. Whitewood \$1,819
114. Wilmot \$1,815
115. Winner \$5,231
116. Woonsocket \$3,089
117. Worthing \$1,395
118. Clark County \$5,450
119. Codington County \$7,911
120. Colton \$1,605
121. Crow Creek Sioux Tribe \$4,379
122. Grant County \$4,524
123. Fall River and Custer County \$8,209
124. Langford, Pierpont, Roslyn, Eden \$2,877
125. Lower Brule Sioux Tribe \$6,065
126. McPherson County \$3,318
127. North Sioux City \$1,199
128. Potter County \$4,801
129. Reliance \$752
130. Spink County \$8,546
131. Town of Alpena \$965
132. Town of Andover \$963
133. Town of Artesian \$2,023
134. Town of Bison \$2,449
135. Town of Brandt \$963
136. Town of Buffalo Gap \$963
137. Town of Cavour \$963
138. Town of Corona \$751
139. Town of Cresbard \$963
140. Town of Dimock \$1,387
141. Town of Dolton \$750
142. Town of Ethan \$1,601
143. Town of Farmer \$750
144. Town of Gayville \$1,178
145. Town of Goodwin, Inc. \$963
146. Town of Hecla \$2,024
147. Town of Hermosa \$1,390
148. Town of Herrick \$751
149. Town of Hitchcock \$1,387
150. Town of Interior \$2,023
151. Town of Isabel \$1,387
152. Town of Kennebec \$1,600
153. Town of Kranzburg \$752
154. Town of Lake City \$1,599
155. Town of Marvin \$962
156. Town of Mission Hill \$1,388
157. Town of Newell \$4,148
158. Town of Nunda \$962
159. Town of Oacoma \$1,179
160. Town of Oelrichs \$963
161. Town of Orient \$1,175
162. Town of Pickstown \$964
163. Town of Pollock \$1,388
164. Town of Pukwana \$2,237
165. Town of Ramona \$1,176
166. Town of Ravinia \$1,175
167. Town of Raymond \$2,023
168. Town of Revillo \$1,387
169. Town of Rosholt \$1,814
170. Town of Seneca \$962
171. Town of Stickney \$1,177
172. Town of Summit \$753
173. Town of Tabor \$2,238
174. Town of Toronto \$964
175. Town of Twin Brooks \$751
176. Town of Virgil \$750
177. Town of Warner \$2,239
178. Town of Wentworth \$1,176
179. Town of Wolsey \$2,238
180. Town of Yale \$1,175
181. Tulare Town \$1,176
182. Volga \$3,312
183. Walworth County \$4,083
184. Yankton County \$5,664

VACCINATION MMR (Measles, Mumps, Rubella) COVERAGE (%) AT KINDERGARTEN ENTRY BY STATE, 2014-2015

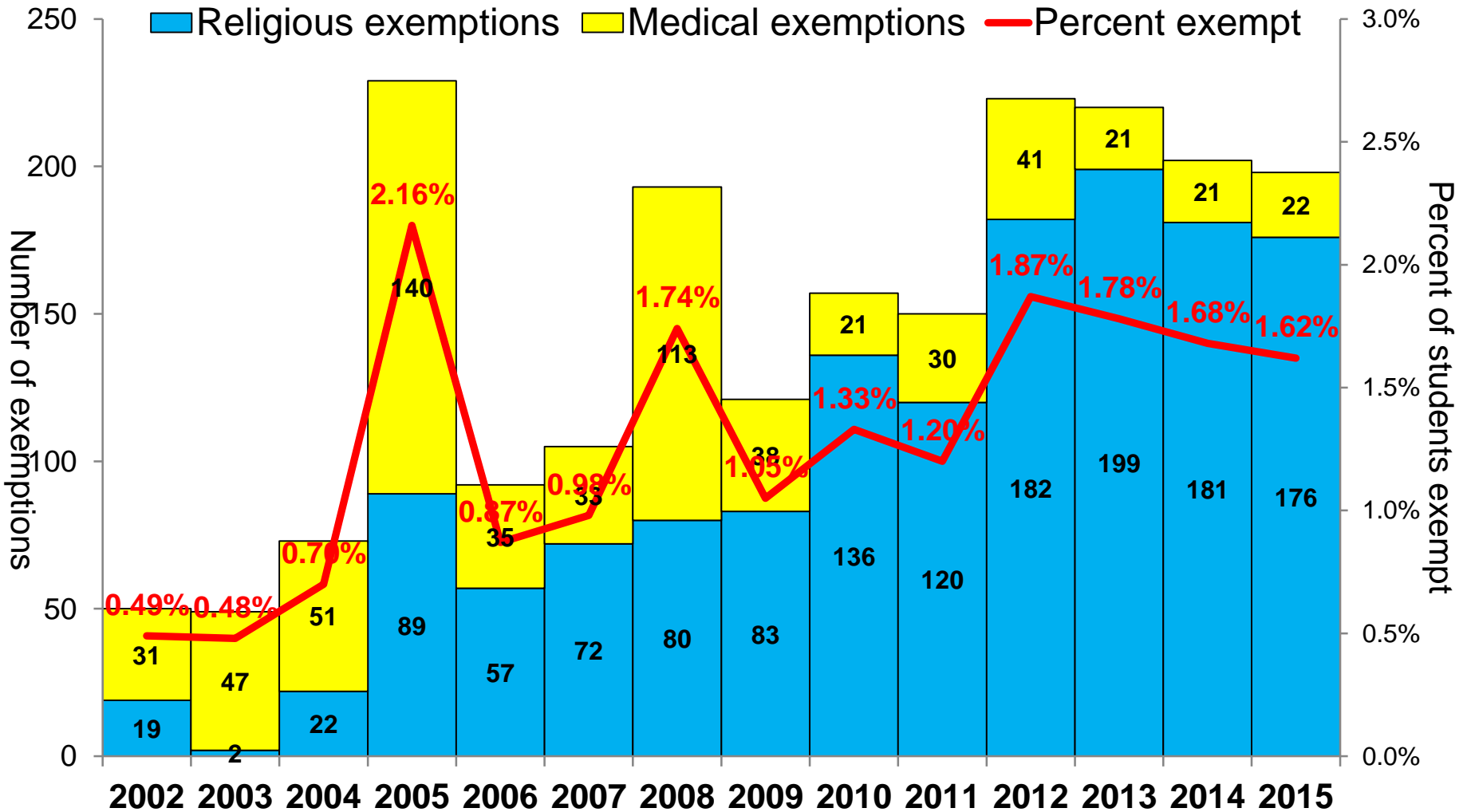


ESTIMATED PERCENTAGE OF KINDERGARTEN CHILDREN WITH EXEMPTION FROM VACCINATION, BY STATE, 2014-15 SCHOOL YEAR

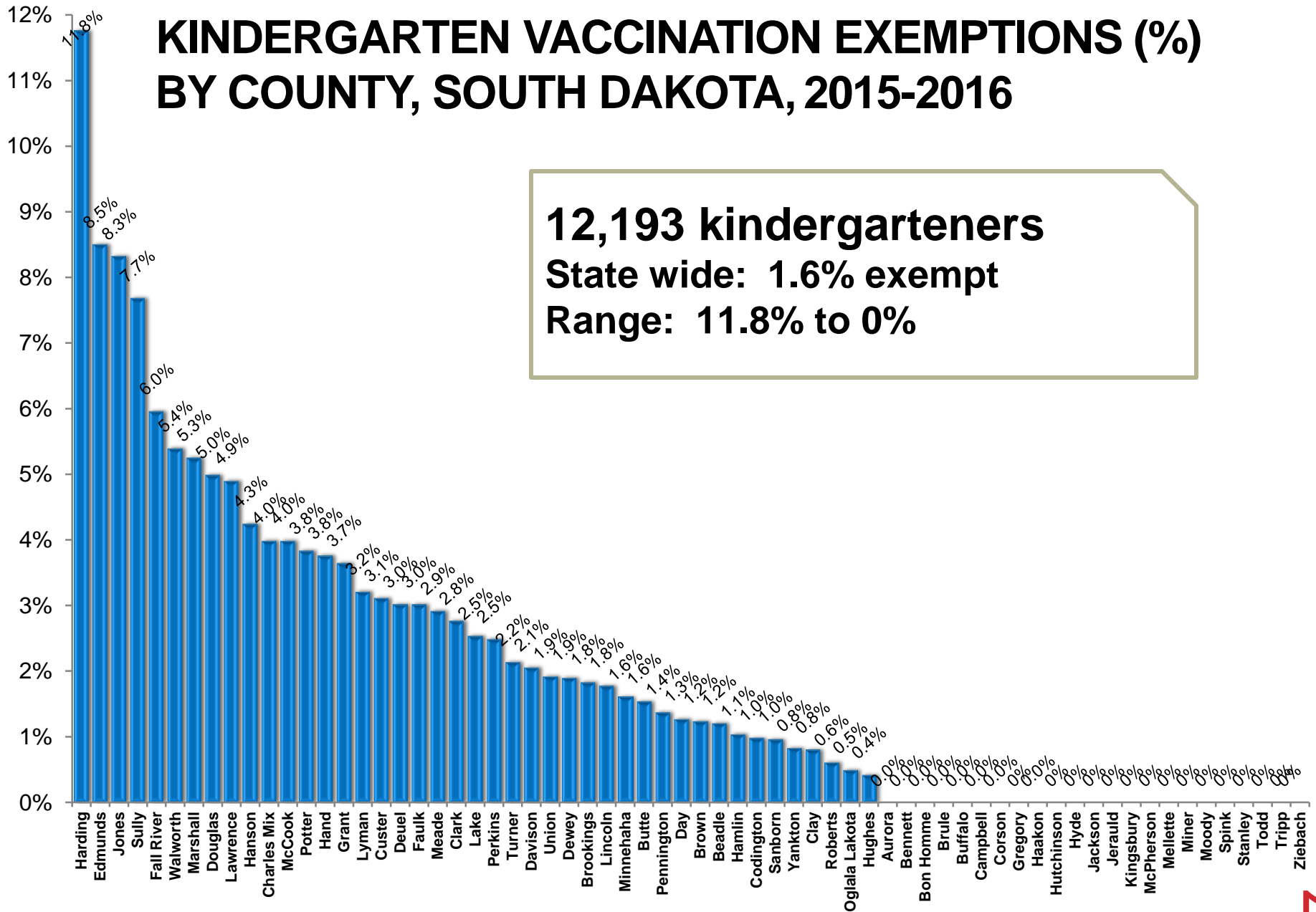


Source: www.cdc.gov/mmwr/preview/mmwrhtml/mm6341a1.htm

KINDERGARTEN VACCINATION EXEMPTIONS, SOUTH DAKOTA 2002-2015



KINDERGARTEN VACCINATION EXEMPTIONS (%) BY COUNTY, SOUTH DAKOTA, 2015-2016



Source: South Dakota Department of Health (2015 cohort as denominator)

South Dakota Department of Health



doh.sd.gov/strategicplan

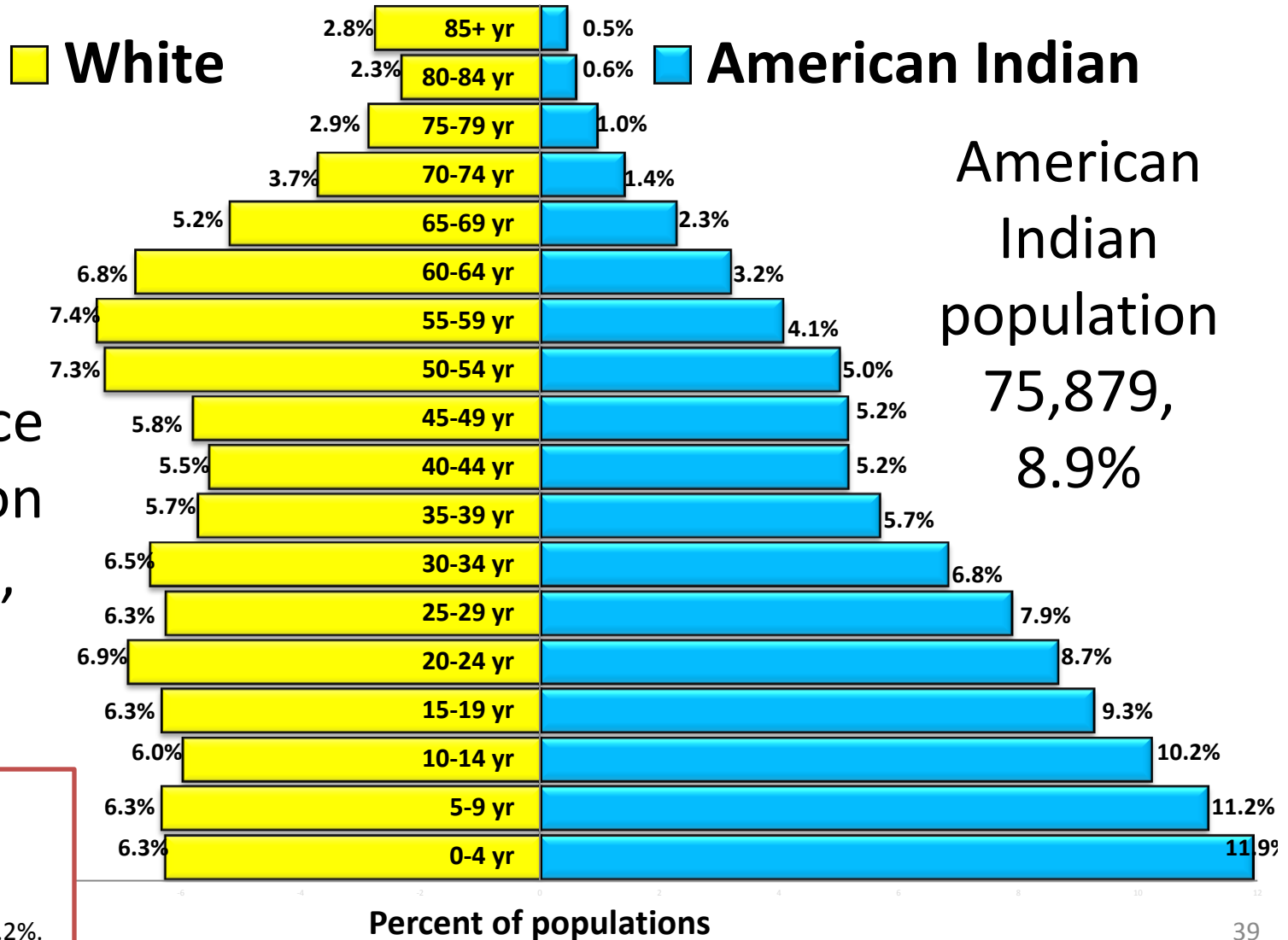
Vision **Healthy** People
Healthy Communities
Healthy South Dakota

Mission To promote, protect and improve the health of every South Dakotan

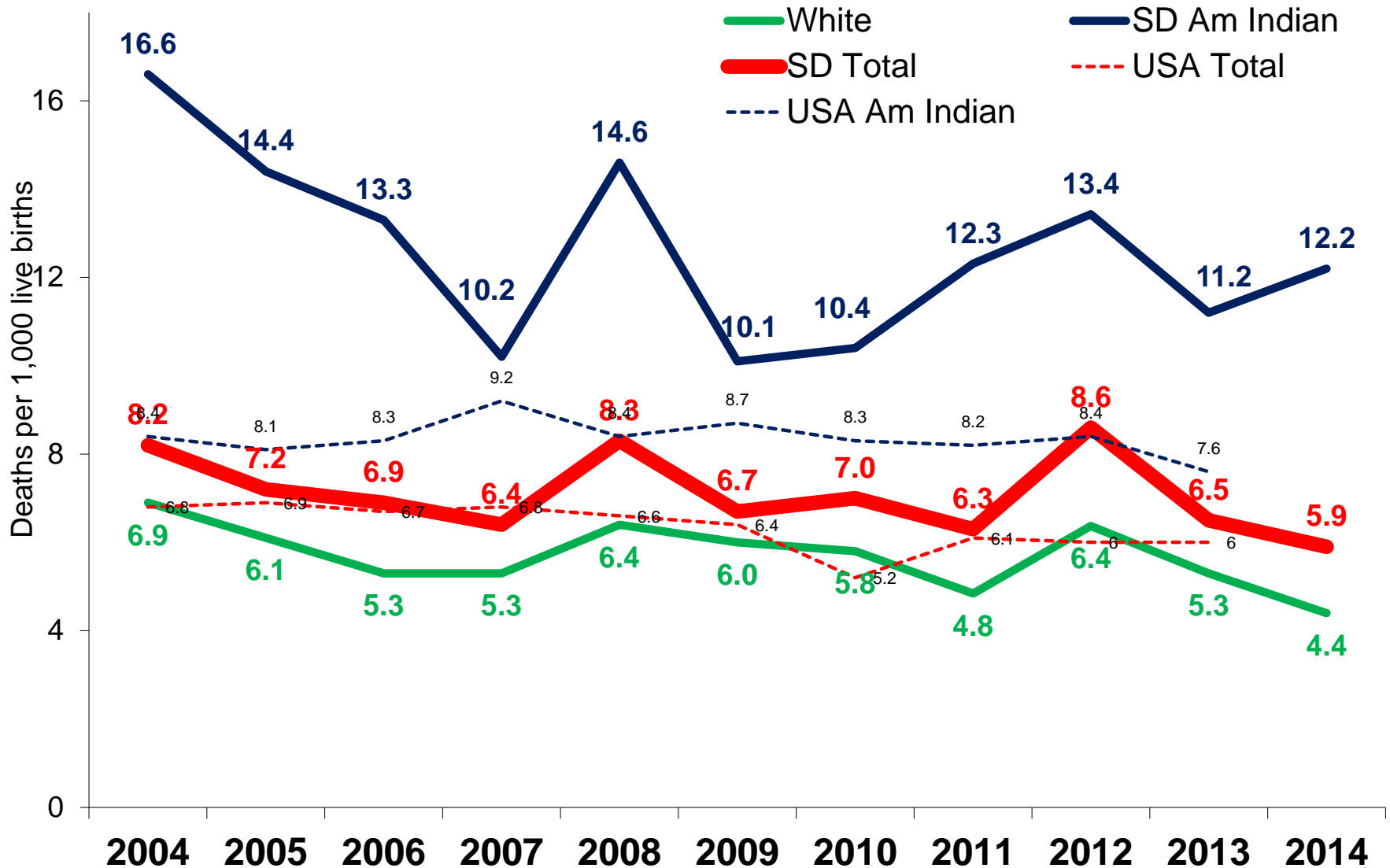
Guiding Principles **Serve** with integrity
Eliminate health disparities
Demonstrate leadership and accountability
Focus on prevention and outcomes
Leverage partnerships
Promote innovation

South Dakota Population by Race and Age

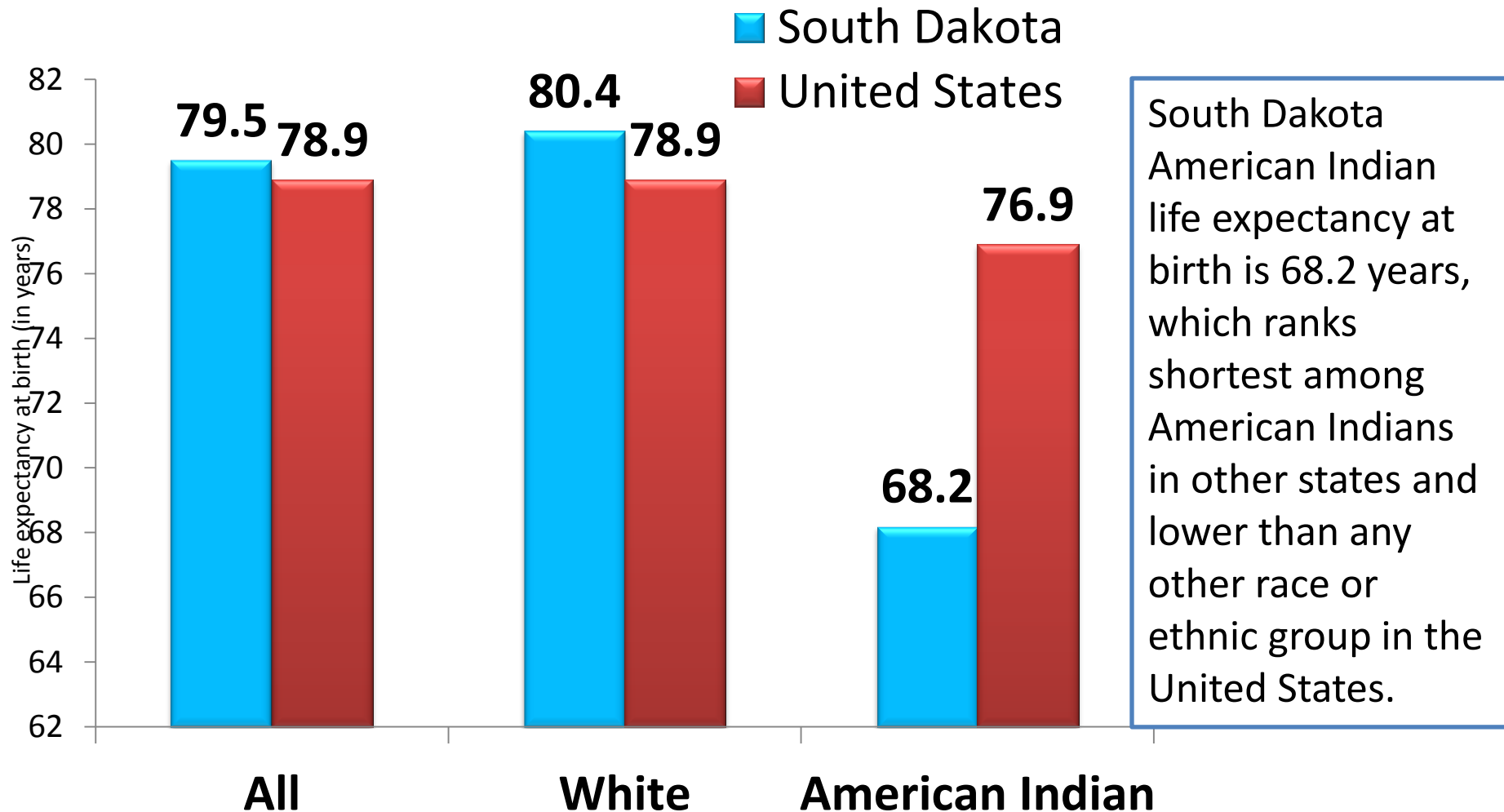
(% population), (2014 population estimate, US Census Bureau)



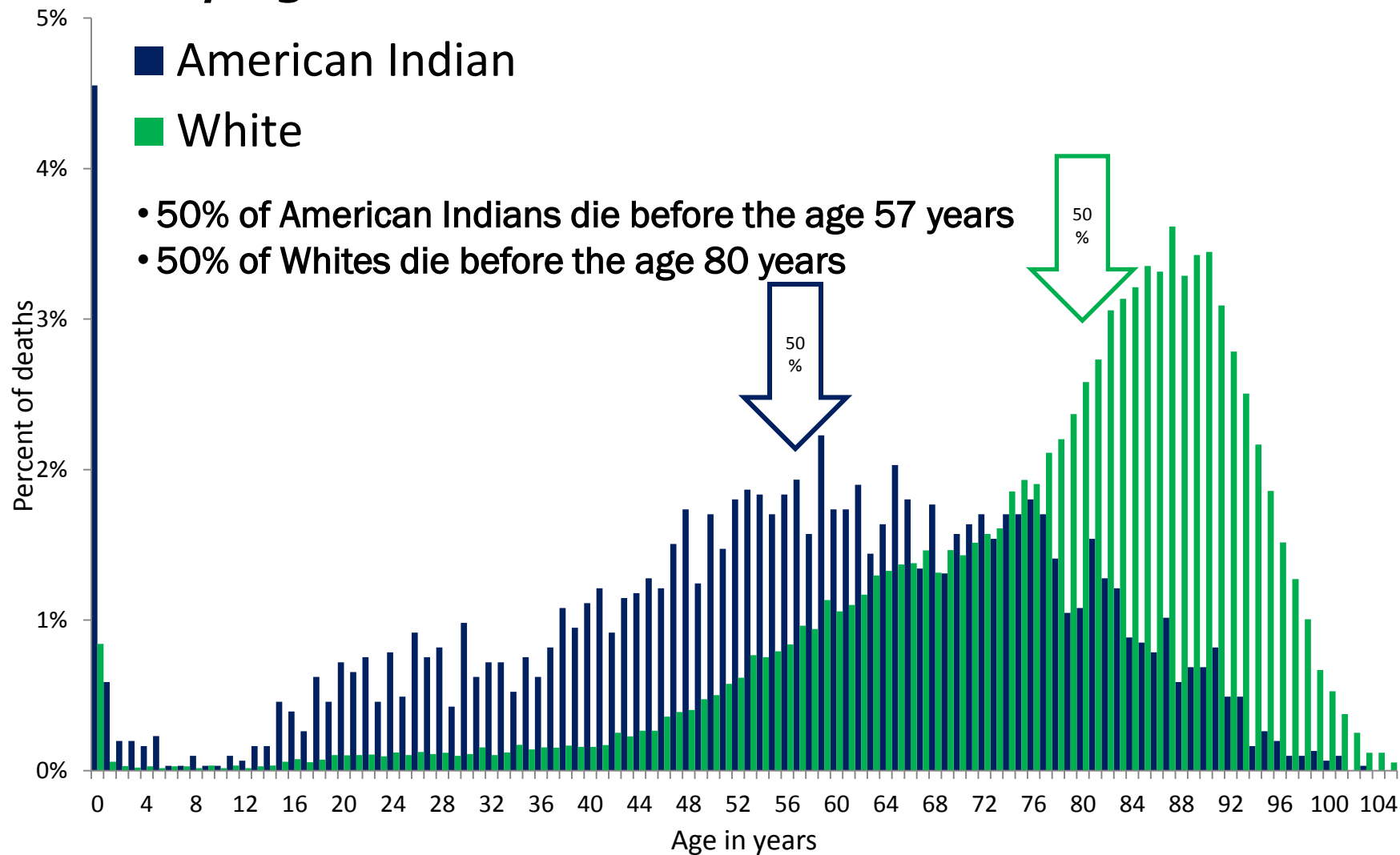
Infant Mortality Disparity, South Dakota, 2004 – 2014 (Infant deaths per 1,000 live births)



Life expectancy at birth (in years) by race, South Dakota and United States, 2010

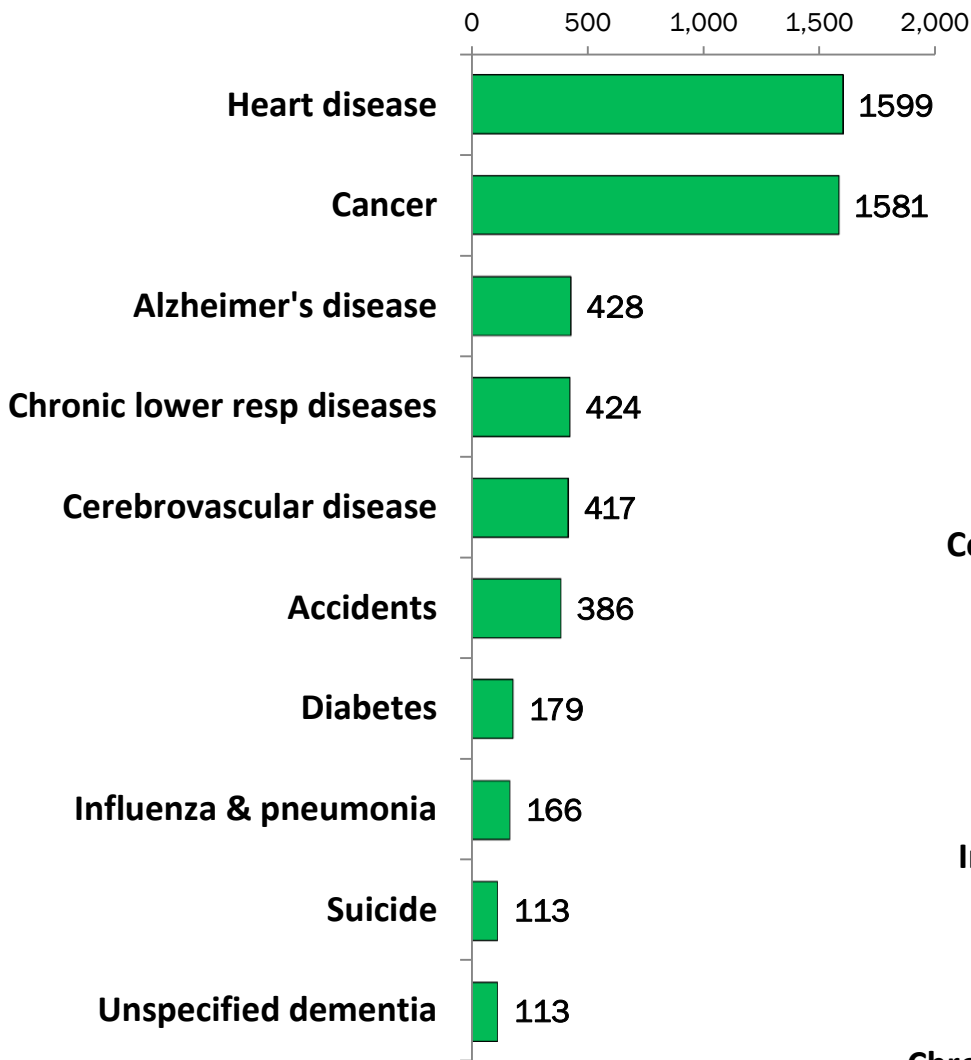


American Indian and White mortality distribution by age at death, South Dakota 2010-2014

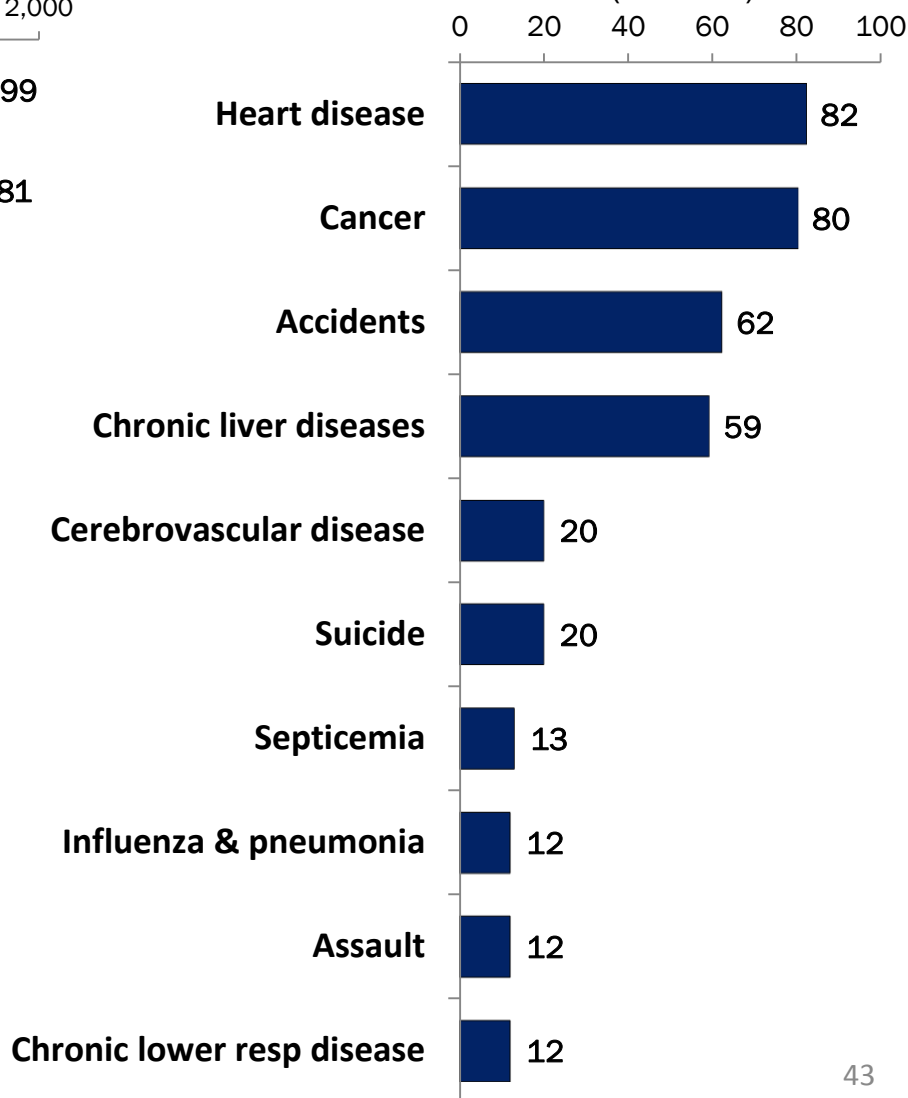


Leading causes of death by race, South Dakota 2014

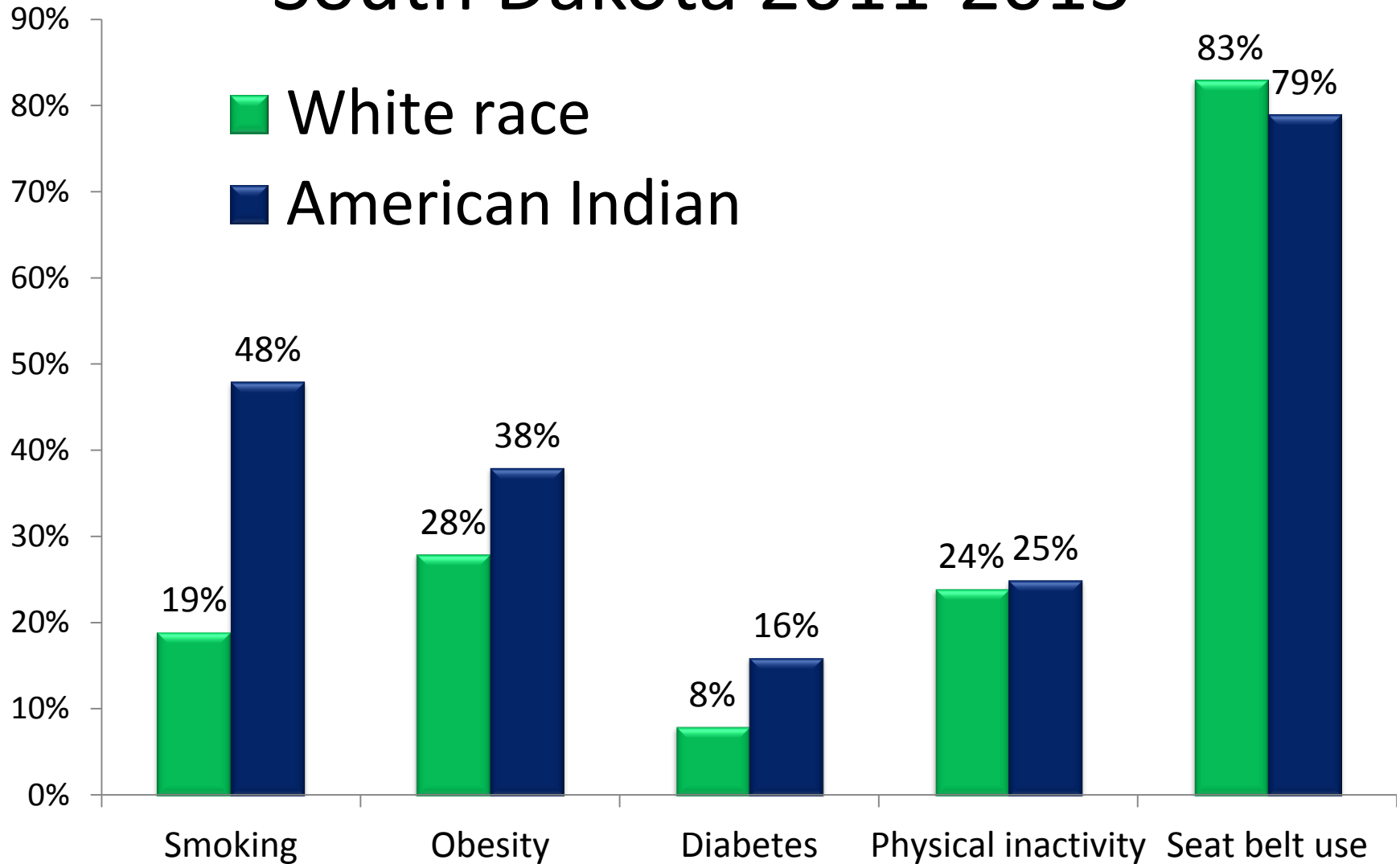
White deaths (n=6,840)



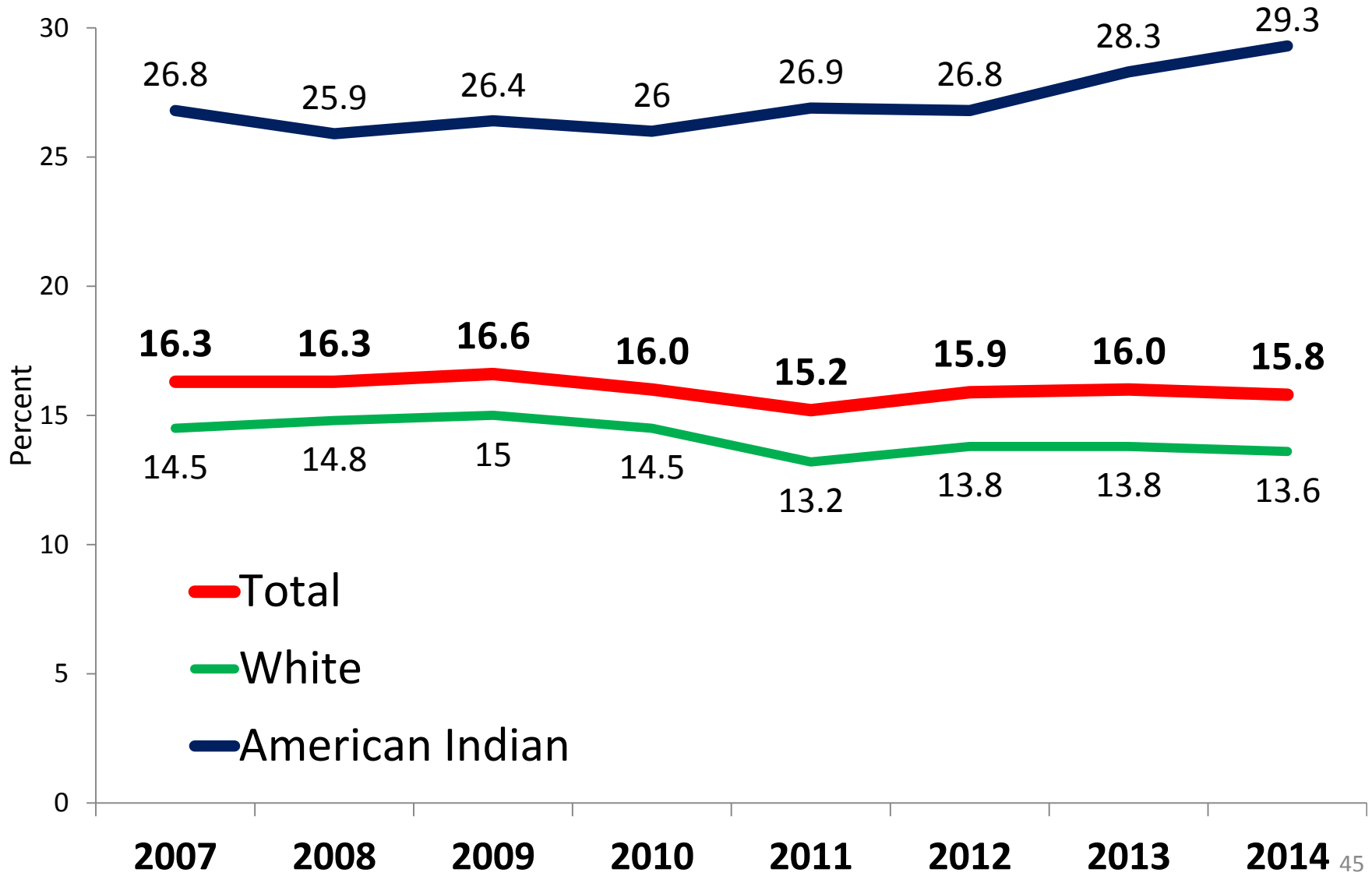
American Indian
deaths (n=562)



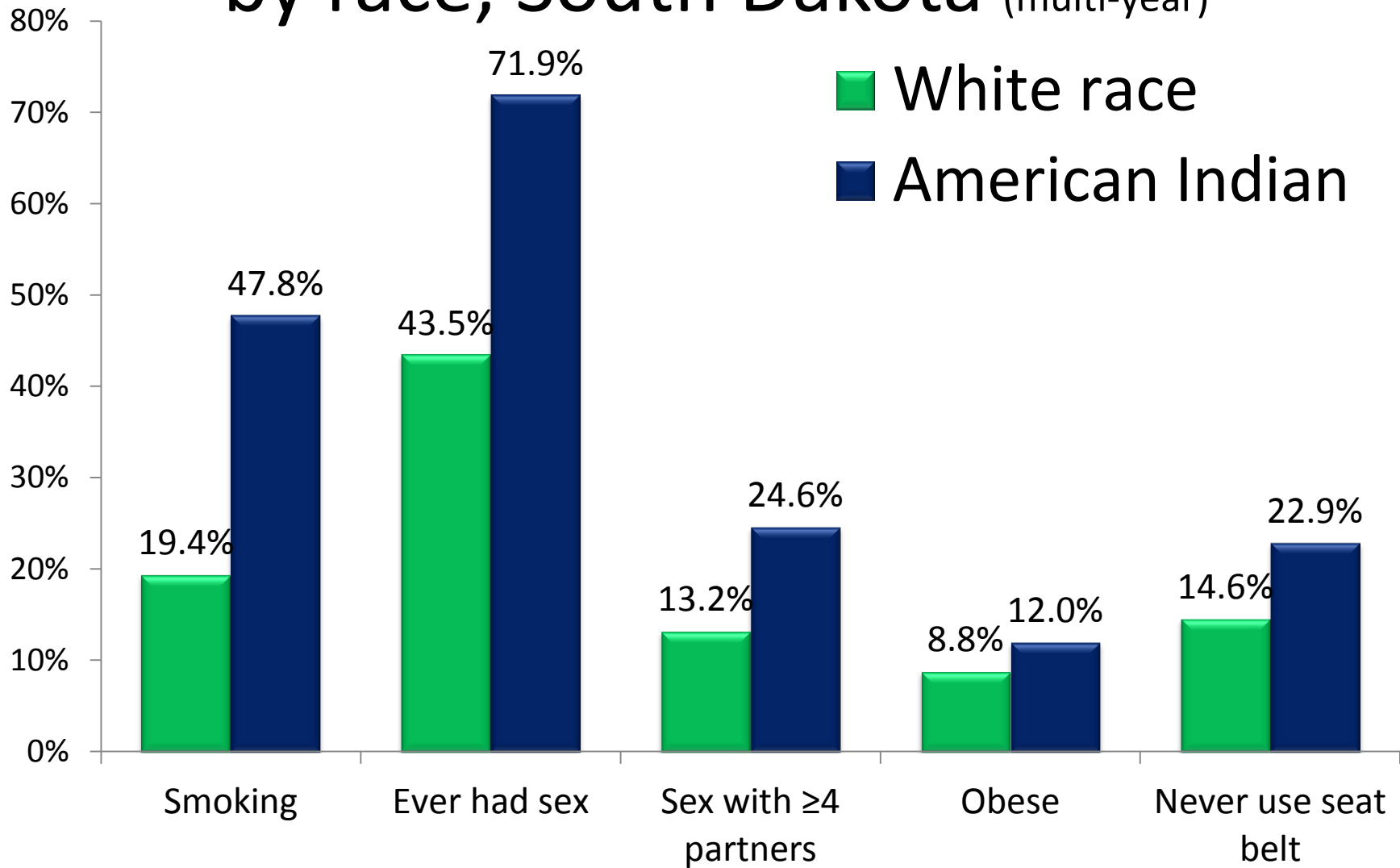
Adult risk factor survey by race, South Dakota 2011-2013



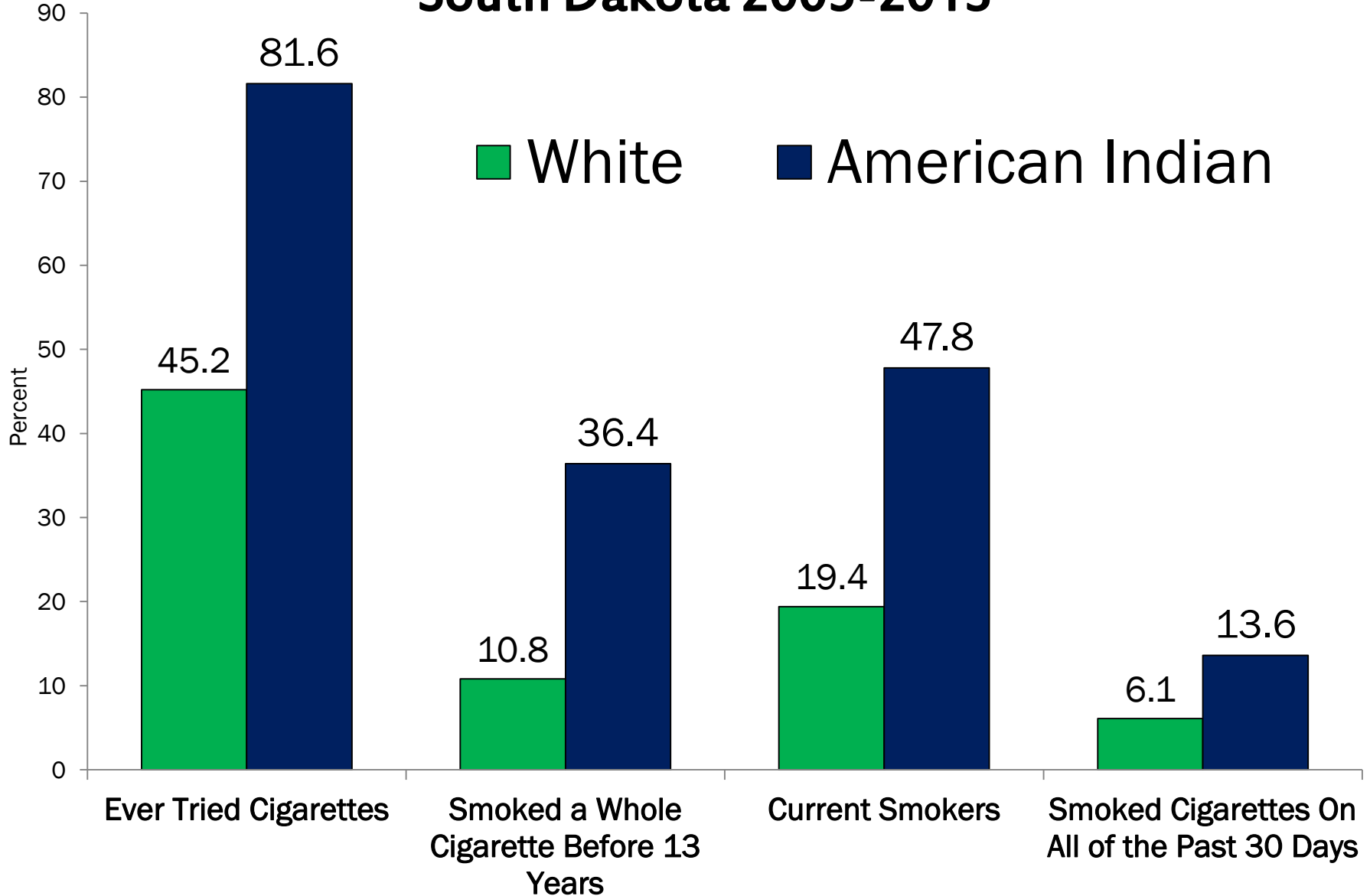
School Children Obesity ($\geq 95^{\text{th}}$ percentile BMI for age), South Dakota, 2007-2014



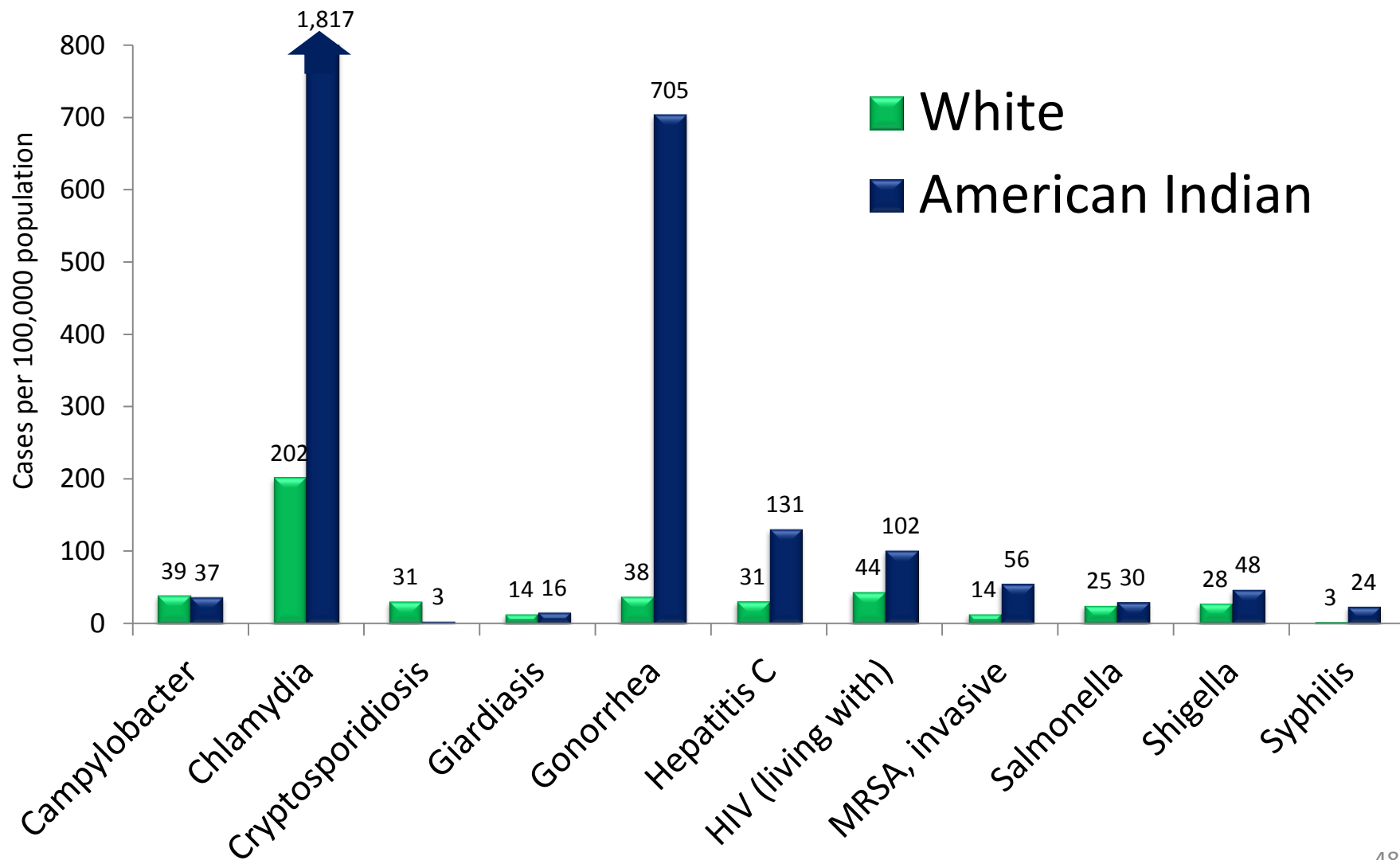
High school student risk factor survey by race, South Dakota (multi-year)



Youth Cigarette: SD High School Students, South Dakota 2005-2013



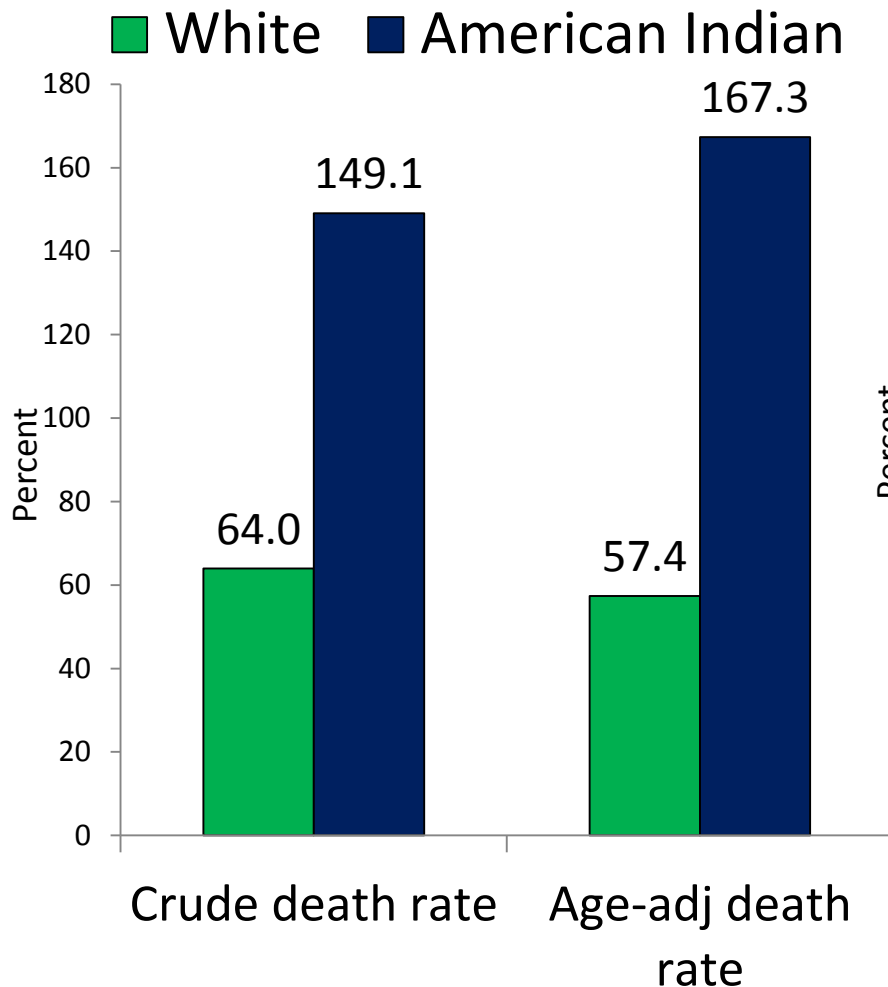
Incidence of selected disease by race, South Dakota 2015 (cases per 100,000 population)



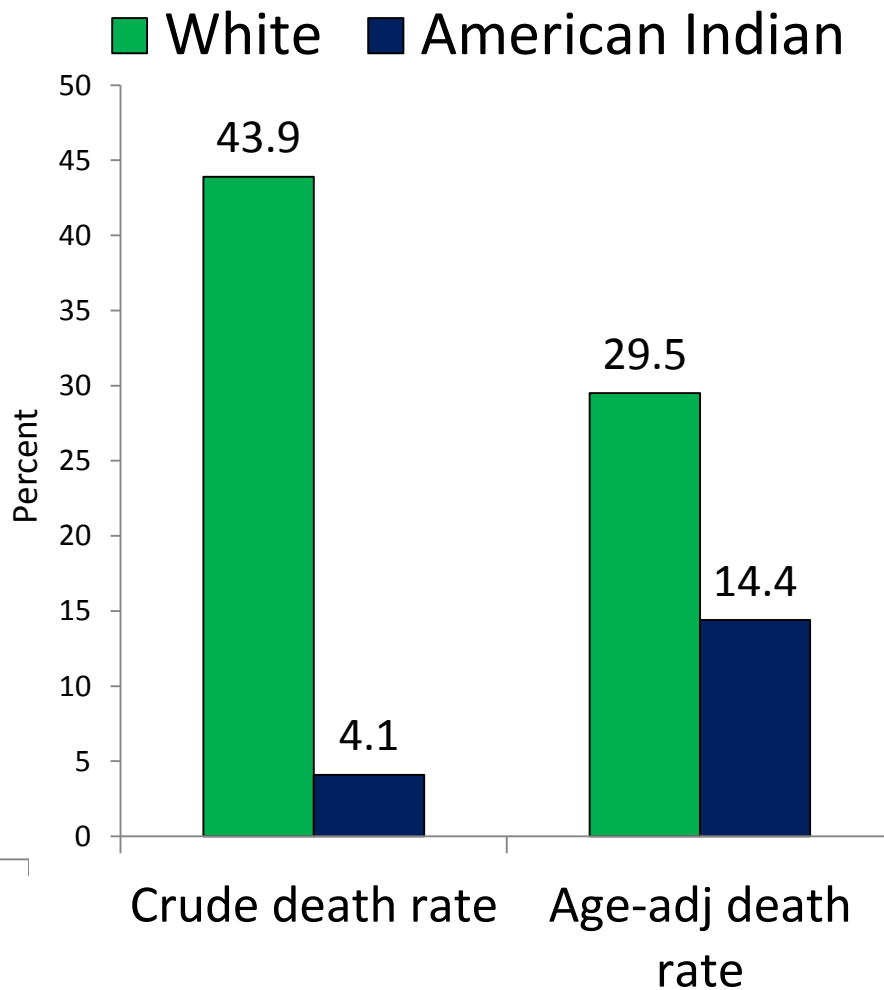
Death rates, South Dakota 2004-2015

(deaths per 100,000 population)

Accidental death rates (V01-Y89)

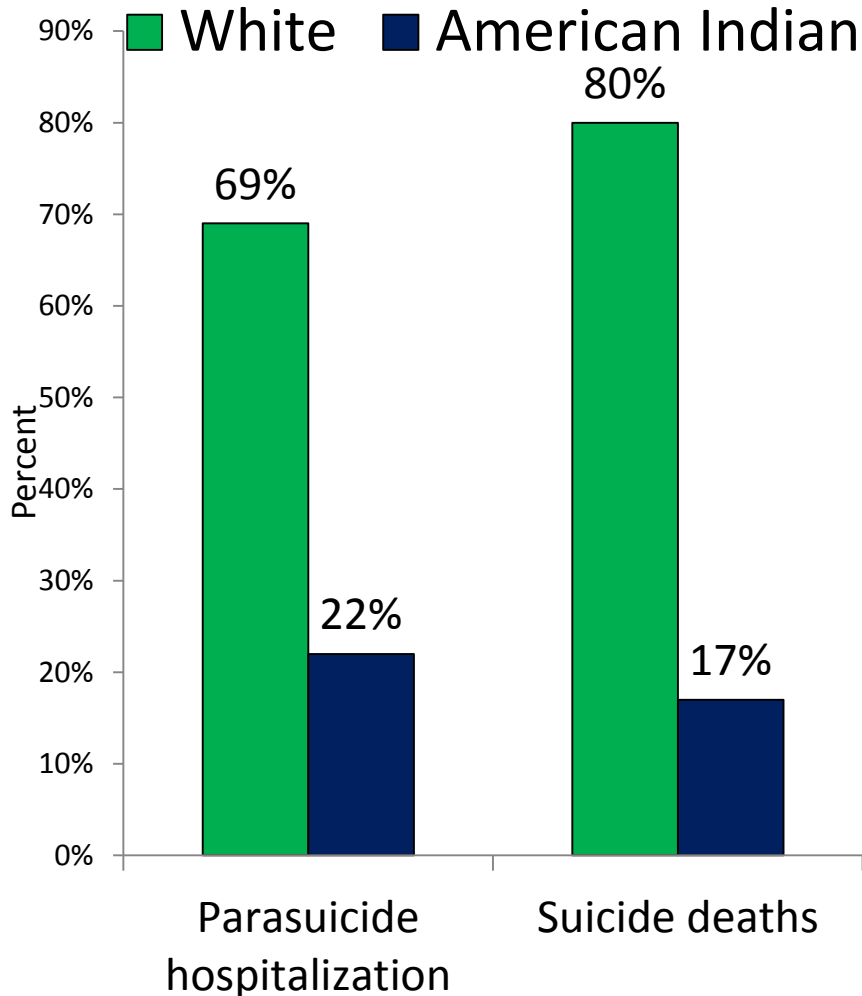


Alzheimer's death rates (G30)

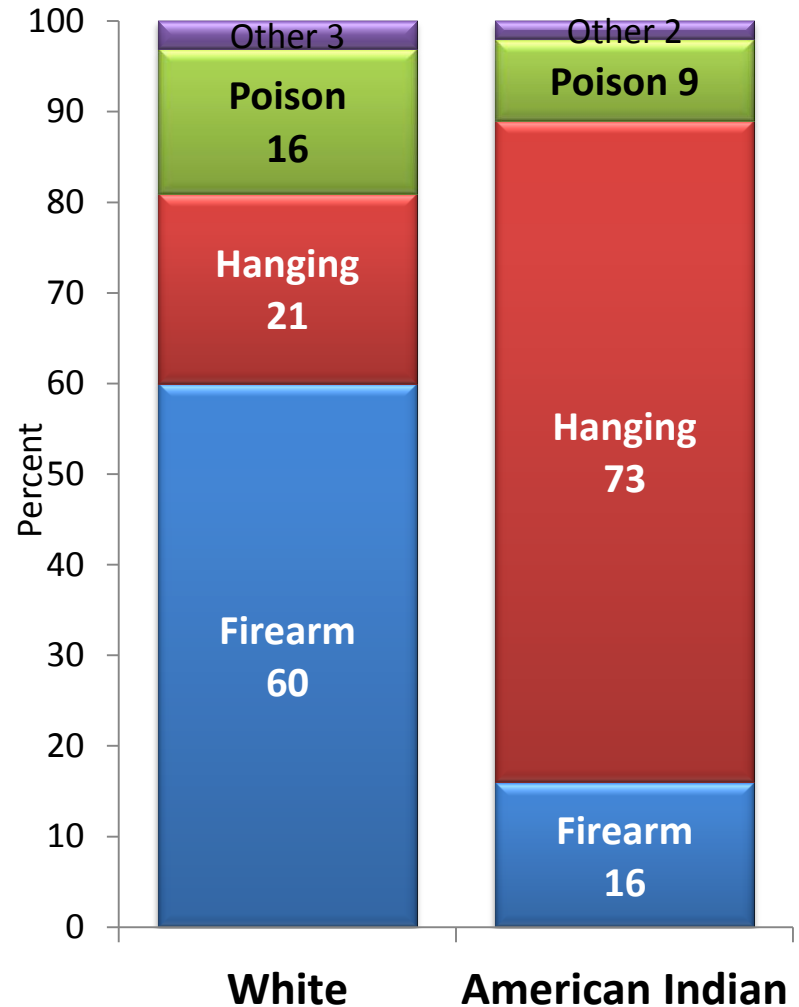


Suicide, South Dakota 2004-2015

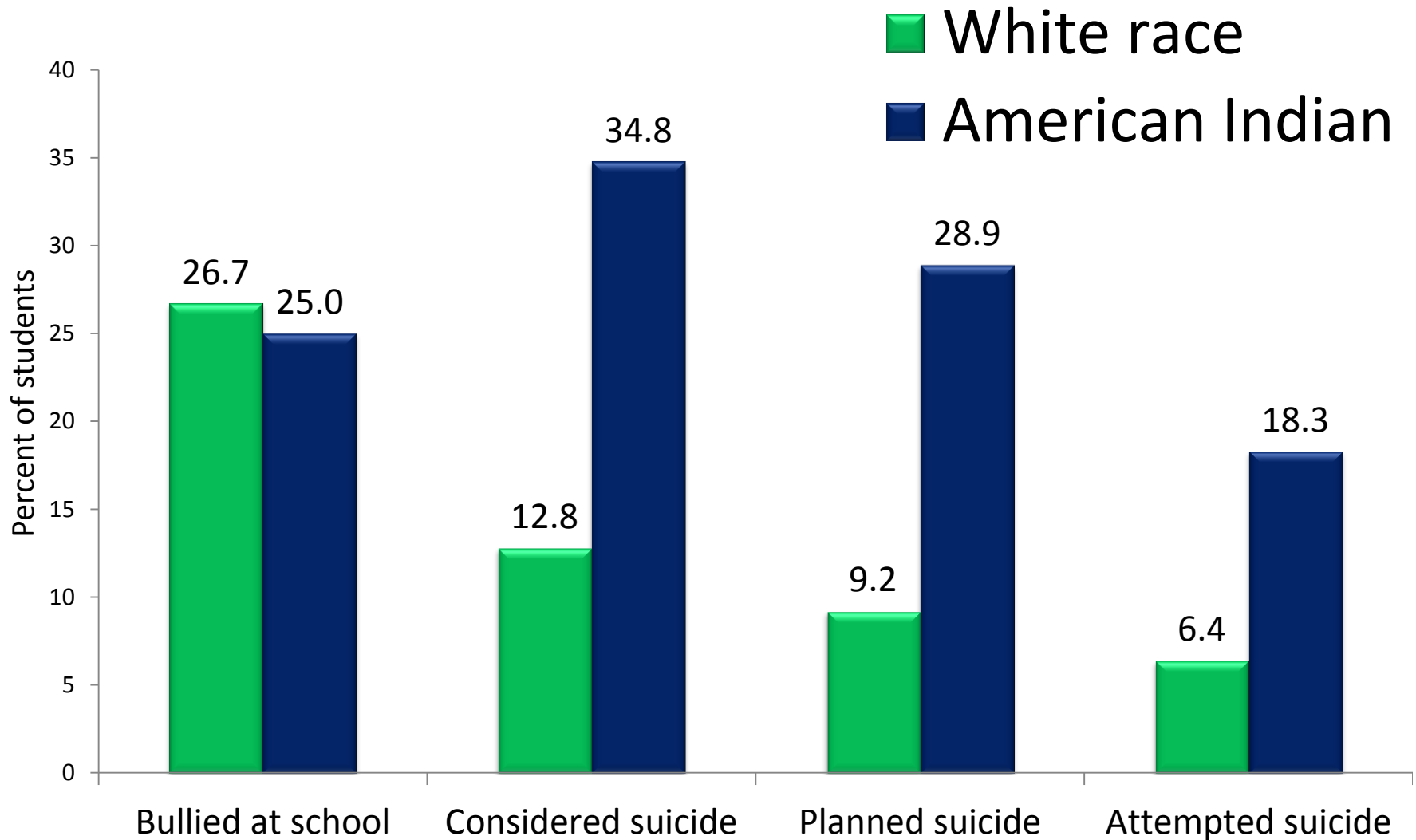
Percent of parasuicide and suicide



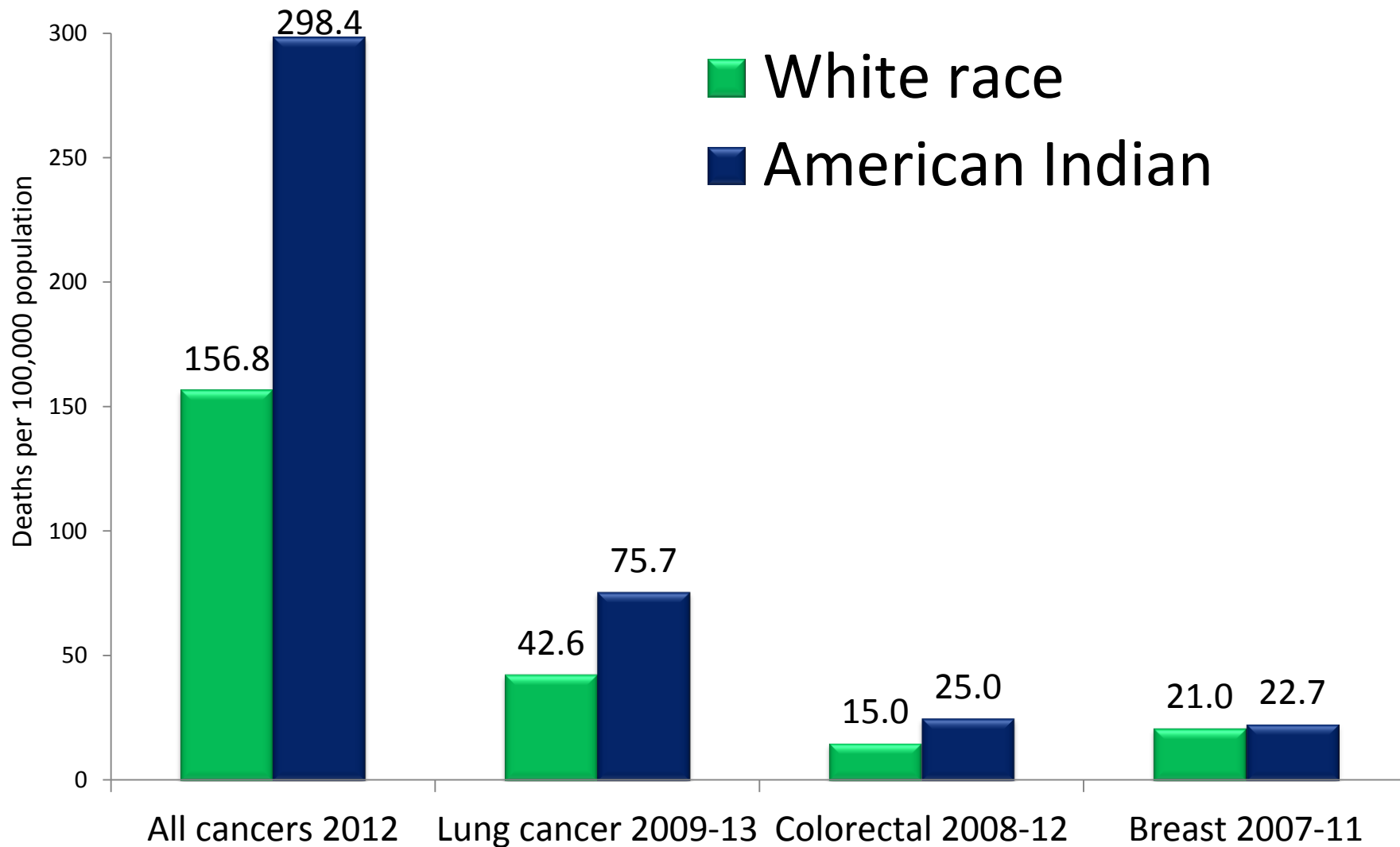
Suicide method (percents)



Suicide behaviors: high school students by race, South Dakota 2011 and 2013



Cancer mortality by race (age-adjusted rates), South Dakota



QUESTIONS ?

THANK YOU