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Southern Joins Health Department As Public Health Laboratory Director

Timothy Southern, Ph.D., has joined the South Dakota Department of Health as Director of the State Public Health Laboratory.

“Dr. Southern is a great addition to our team,” said Kim Malsam-Rysdon, Secretary of Health. “Even before he was officially on board, he provided invaluable expertise and guidance as we developed Ebola testing capabilities at our laboratory. We look forward to continued laboratory enhancements under his leadership.”



Southern recently completed a clinical microbiology fellowship at the University of Nebraska Medical Center (UNMC) and the Nebraska Public Health Laboratory. He was involved in the center’s response to the Ebola outbreak and participated in a study of Ebola diagnostics with Emory University and the Centers for Disease Control and Prevention that was published in a recent issue of the *Journal of Clinical Microbiology*.

Southern holds a doctorate in biomedical sciences from East Tennessee State University in Johnson City, Tennessee. Prior to his UNMC fellowship, he was a postdoctoral fellow at the National Institutes of Health Rocky Mountain Laboratories in Hamilton, Montana.

He has authored numerous professional articles and presented at meetings of the American Society of Microbiology and the Association of Public Health Laboratories. During his tenure at UNMC he was also a lecturer for the College of Pharmacy and the Medical Residency Training Program and an instructor for the Medical Microbiology Student Laboratory.

South Dakota’s state public health laboratory provides medical microbiology, environmental health and forensic chemistry testing as well as specialized testing for low-incidence, high-risk diseases and emerging pathogens. The laboratory is a member of the Laboratory Response Network, the Environmental Laboratory Response Network and is an EPA drinking water certified laboratory.

Teen Births in South Dakota, 2006-2014

By Wei Bai, Ph.D., Bonny Specker, Ph.D., Lon Kightlinger, Ph.D.

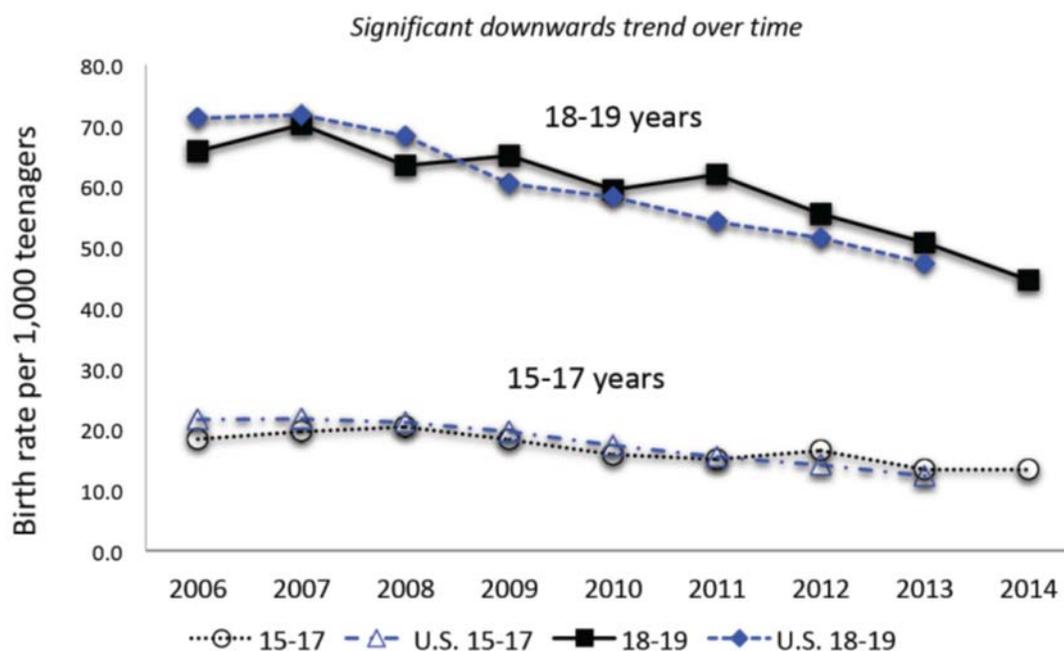
EA Martin Program, South Dakota State University, South Dakota Department of Health

According to the Office of Adolescent Health at the U.S. Department of Health & Human Services, the teen birth rate in the U.S. has dropped continuously over the past 20 years and dropped 10% nationwide between 2012 and 2013. In 2013, about 273,000 babies were born nationally to adolescent teens aged 15-19 years for a rate of 26.5/1,000 adolescent females. According to the data from the World Bank, the U.S. teen birth rate in 2010-14 was higher than that of many developed countries, including Canada, Japan, Australia, and the majority of European countries. Teen pregnancies are associated with negative outcomes for the mother, child, and society.

The purpose of this report is to provide information on rates and trends of teen births in South Dakota using 2006-2014 birth certificate data. The following graphs can be summarized as follows:

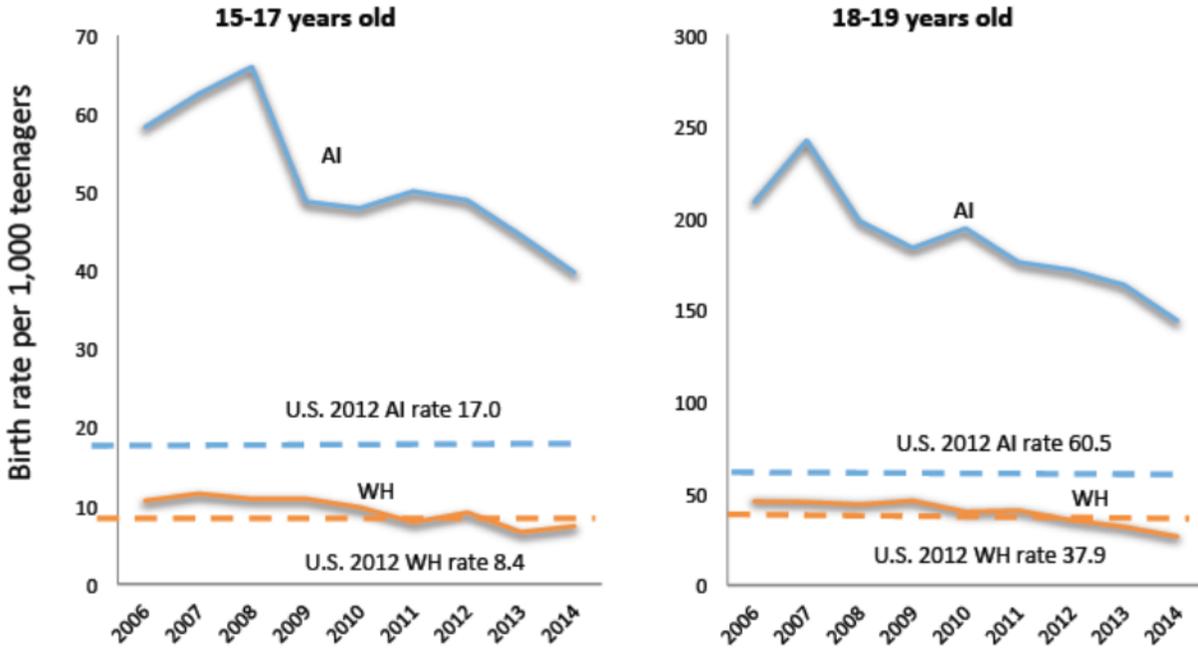
- There has been a decrease in teen births between 2006 and 2014 in South Dakota for ages 15-17 years and 18-19 years (**Figure 1**).
- Teen birth rates for White and American Indian teens have decreased between 2006 and 2014. However, teen birth rates among South Dakota American Indians are about 4-5 times higher than that of Whites for both 15-17 and 18-19 year old age groups. The teen birth rate among South Dakota American Indians is higher than that of U.S. American Indians (**Figure 2**).
- Compared with births of mothers aged 20 years and older, teen mothers deliver a higher percent of low birth weight babies and their infants have a higher mortality rate (**Figure 3**).
- South Dakota has a higher teen pregnancy rate than most of the surrounding states (**Figure 4**).
- Birth rates vary widely by geographical location (**Figure 5**).

Figure 1. Birth Rate per 1,000 Teenagers, 2006-2014



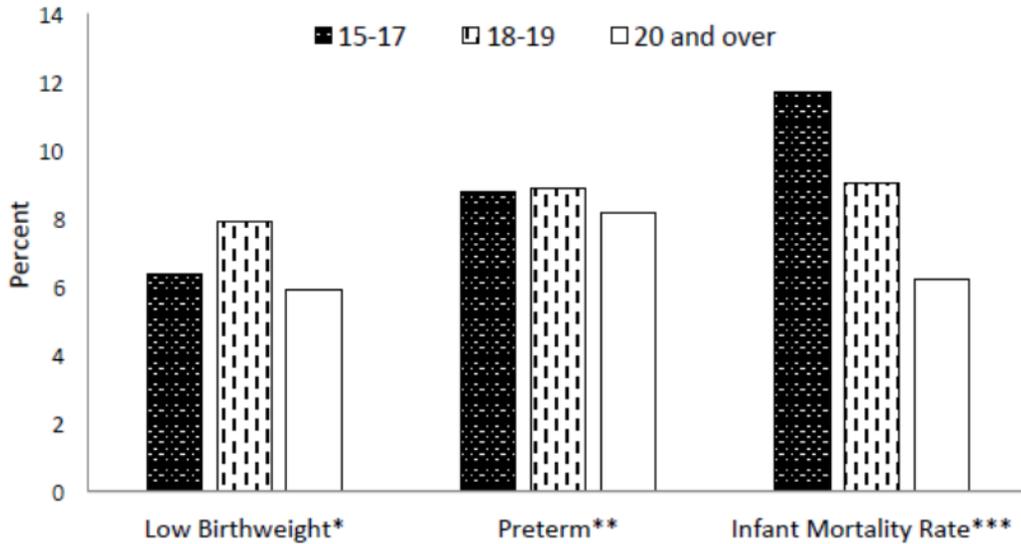
Source: South Dakota Vital Records, 2006-2014. http://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_04.pdf.

Figure 2. Birth Rate per 1,000 Teenagers by Race, 2006-2014



Source: South Dakota Vital Records, 2006-2014. http://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_04.pdf

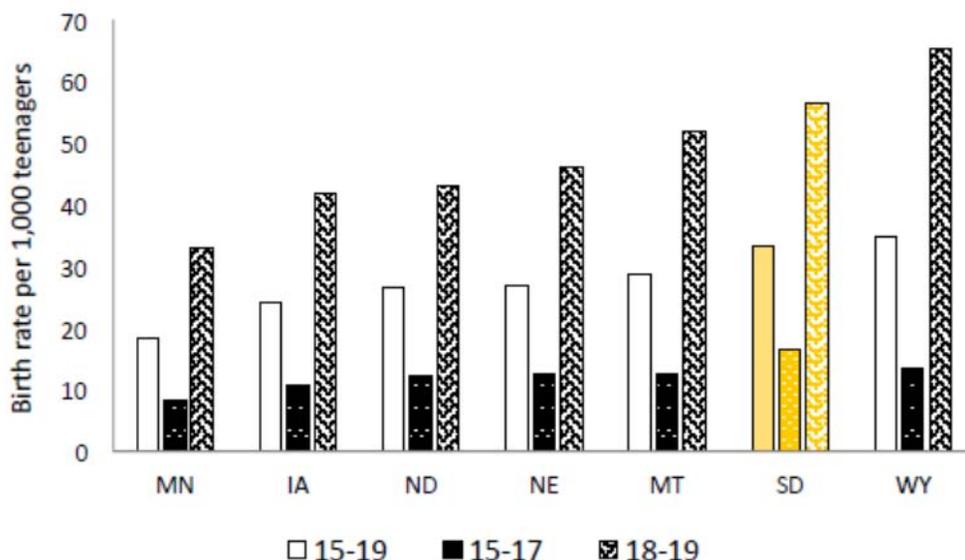
Figure 3. Selected Birth Characteristics by Maternal Age Group, South Dakota, 2010-2014



- * Defined as birthweight less than 2,500g
- ** Defined as birth prior to 37 gestational weeks
- *** Defined as infant deaths per 1,000 live births

Source: South Dakota Vital Records, 2010-2014.

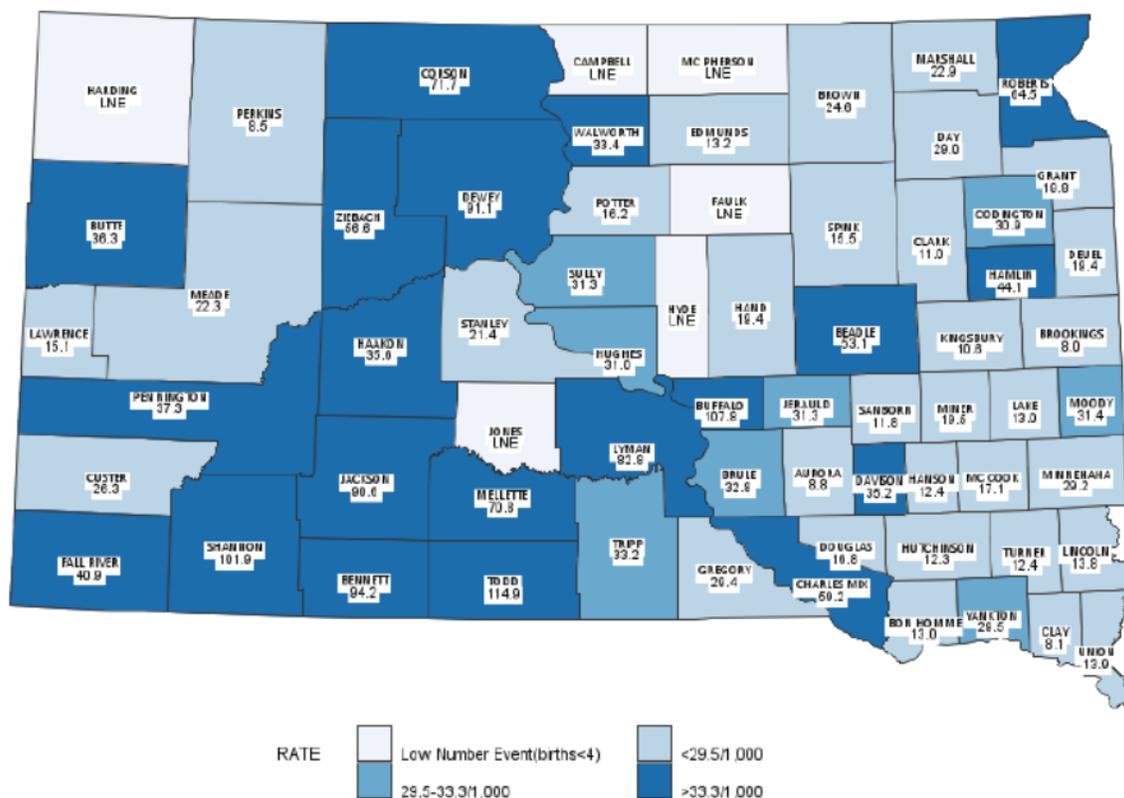
Figure 4. Teen Birth Rates in South Dakota and Surrounding States, 2012



Source: http://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_04.pdf

Figure 5. Birth Rates per 1,000 Teenagers by County, SD 2010-2014

U.S. 2012 rate: 29.4 SD 2012 rate: 33.3



Source: South Dakota Vital Records, 2010-2014.

Antibiogram of Selected Pathogens, South Dakota 2014

| Gram positive organisms | | | | | | | | |
|---|------------------------|--|--|-----------------------|-----------------------|--------------------------|-----------------------|----------------------|
|  SOUTH DAKOTA DEPARTMENT OF HEALTH  SDSU South Dakota State University College of Pharmacy | Staphylococcus aureus† | Methicillin-susceptible S. aureus (MSSA) | Methicillin-resistant S. aureus (MRSA) | Group A Streptococcus | Group B Streptococcus | Streptococcus pneumoniae | Enterococcus faecalis | Enterococcus faecium |
| | Antibiotic | | | | | | | |
| Ertapenem | | | | | | 98% (80) | | |
| Imipenem | | | | | | 90% (10) | | |
| Meropenem | | | | | | 92% (85) | | |
| Amoxicillin/Clavulanic acid | | | | | | 100% (59) | 100% (55) | |
| Cefepime | | | | 100% (1) | 100% (8) | 100% (10) | | |
| Cefotaxime | | | | 100% (1) | 100% (12) | 97% (197) | | |
| Ceftriaxone | | | | 80% (5) | 98% (58) | 98% (821) | | |
| Ampicillin | | | | 100% (24) | 99% (208) | 100% (1) | 99% (2437) | 18% (339) |
| Oxacillin‡ | 57% (3344) | 100% (3537) | 0% (2463) | 100% (19) | | 80% (20) | 100% (1) | |
| Penicillin‡ | 7% (2328) | 17% (1032) | 0% (1028) | 100% (8) | 99% (207) | 88% (838) | 97% (2659) | 14% (447) |
| Ciprofloxacin | 64% (3407) | 86% (602) | 35% (650) | | | | 71% (3211) | 9% (503) |
| Levofloxacin | 63% (2710) | 83% (624) | 37% (665) | 96% (27) | 99% (311) | 99% (851) | 73% (3288) | 11% (503) |
| Ofloxacin | 58% (592) | | 0% (124) | | 100% (5) | 91% (23) | | |
| Chloramphenicol | | 93% (137) | 94% (87) | 100% (1) | 100% (8) | 99% (79) | 92% (13) | |
| Clindamycin | 76% (2680) | 79% (3506) | 67% (2387) | 81% (27) | 46% (209) | 90% (249) | | |
| Daptomycin | 100% (902) | 100% (231) | 97% (158) | | 100% (8) | | 100% (314) | 86% (7) |
| Erythromycin | 45% (3256) | 52% (3461) | 15% (2538) | 67% (27) | 39% (111) | 44% (835) | 15% (1365) | 5% (364) |
| Gentamicin | 99% (3394) | 100% (623) | 99% (834) | | | | 69% (420) | 96% (55) |
| Linezolid | 100% (3262) | 99% (1031) | 98% (1024) | 100% (4) | 100% (193) | 100% (238) | 99% (1938) | 99% (419) |
| Nitrofurantoin* | 100% (2899) | 99% (3263) | 99% (2400) | | | | 99% (3274) | 30% (487) |
| Rifampin | 99% (3243) | 100% (674) | 99% (860) | | | | 73% (117) | 19% (27) |
| Trimethoprim/Sulfamethoxazole | 99% (3848) | 98% (3473) | 99% (2588) | | | 71% (834) | 15% (73) | |
| Tetracycline | 94% (3846) | 95% (3457) | 95% (2523) | 100% (1) | 22% (73) | 86% (326) | 24% (3050) | 19% (482) |
| Vancomycin | 100% (3843) | 100% (3521) | 100% (2588) | 100% (27) | 100% (240) | 100% (856) | 99% (3414) | 43% (522) |

*Urine isolates only
 †From laboratories which did not separate MRSA and MSSA. Data included in this column is not included in the MSSA or MRSA columns.
 ‡Only reported oxacillin and penicillin for Staph. aureus based on CLSI guidelines
 CLSI recommends reporting data only if 30 or more isolates analyzed, less than 30 isolates are reported for completeness

Antibiogram of Selected Pathogens, South Dakota 2014

| Gram negative organisms | | | | | | | |
|---|---|---|------------------------|------------------|--|--------------|---------------|
|  SOUTH DAKOTA DEPARTMENT OF HEALTH  South Dakota State University College of Pharmacy | Salmonella spp. | Klebsiella pneumoniae | Pseudomonas aeruginosa | Escherichia coli | Extended spectrum beta-lactamase (ESBL) E. coli [‡] | Proteus spp. | Shigella spp. |
| | % Susceptible and (n) number of isolates tested | | | | | | |
| Ertapenem | | 99% (1365) | | 99% (6549) | 100% (281) | 99% (338) | |
| Imipenem | | 99% (1416) | 80% (747) | 99% (7021) | 100% (18) | 71% (337) | |
| Meropenem | | 100% (1962) | 90% (1758) | 100% (9398) | 100% (88) | 100% (412) | |
| Amoxicillin/Clavulanic acid | | 96% (269) | | 89% (1764) | | 95% (88) | |
| Ampicillin/Sulbactam | | 89% (2863) | | 67% (17494) | 15% (106) | 87% (1125) | |
| Cefazolin | | 96% (4243) | | 92% (23491) | 2% (106) | 91% (1393) | |
| Cefdinir | | 100% (11) | | | | | |
| Cefepime | | 98% (3838) | 92% (1936) | 98% (22048) | 0% (106) | 96% (1245) | |
| Cefotaxime | | 97% (916) | 35% (144) | 97% (4233) | | 96% (314) | |
| Ceftazidime | | 98% (3745) | 93% (2261) | 98% (21287) | 1% (106) | 97% (1509) | |
| Ceftriaxone | | 98% (3816) | 38% (848) | 97% (23656) | 0% (106) | 96% (1380) | 98% (153) |
| Ampicillin | 74% (35) | 1% (1777) | 0% (202) | 60% (23986) | 0% (106) | 83% (1353) | 95% (176) |
| Piperacillin/Tazobactam | | 97% (3987) | 97% (2006) | 97% (20087) | 90% (106) | 100% (1260) | |
| Ciprofloxacin | 100% (37) | 97% (4202) | 80% (2488) | 83% (24203) | 13% (399) | 73% (1278) | 100% (179) |
| Levofloxacin | 100% (4) | 97% (3857) | 77% (2261) | 83% (21433) | 13% (399) | 79% (1190) | |
| Ofloxacin | 100% (3) | | | 91% (539) | | 67% (21) | |
| Clindamycin | | 100% (73) | | | | 87% (166) | |
| Erthyromycin | | 100% (230) | | | | | |
| Tobramycin | | 94% (3310) | 96% (2031) | 95% (19033) | 54% (399) | 92% (1247) | |
| Gentamicin | | 99% (3993) | 90% (2486) | 94% (24199) | 63% (399) | 90% (1489) | |
| Linezolid | | | | | | | |
| Nitrofurantoin* | | 35% (3253) | 1% (204) | 95% (20051) | 71% (311) | 0% (1073) | |
| Rifampin | | | | | | | |
| Trimethoprim/Sulfamethoxazole | 100% (33) | 93% (4039) | 1% (303) | 80% (24200) | 33% (399) | 81% (1444) | 7% (177) |
| Tetracycline | | 86% (947) | 38% (8) | 78% (3404s) | | 6% (80) | 88% (137) |
| | | >5% increase in susceptibility from last year | | | >5% decrease in susceptibility from last year | | |
| *Urine isolates only | | | | | | | |
| ‡Data only from four laboratories. | | | | | | | |

South Dakota Department of Health – Infectious Disease Surveillance

Selected Morbidity Report, 1 January – 31 August 2015

(provisional numbers) see <http://doh.sd.gov/statistics/surveillance/>

| | Disease | 2015 year-to-date | 5-year median | Percent change |
|---|--|-------------------|---------------|----------------|
| Vaccine-Preventable Diseases | Diphtheria | 0 | 0 | n/a |
| | Tetanus | 1 | 0 | n/a |
| | Pertussis | 4 | 30 | -87% |
| | Poliomyelitis | 0 | 0 | n/a |
| | Measles | 2 | 0 | n/a |
| | Mumps | 0 | 0 | n/a |
| | Rubella | 0 | 0 | n/a |
| | <i>Haemophilus influenzae</i> type b | 1 | 0 | n/a |
| Sexually Transmitted Infections and Blood-borne Diseases | HIV infection | 7 | 15 | -53% |
| | Hepatitis B, acute | 0 | 0 | 0% |
| | Chlamydia | 2937 | 3006 | -23% |
| | Gonorrhea | 766 | 532 | +44% |
| | Syphilis, early | 39 | 15 | +160% |
| Tuberculosis | Tuberculosis | 14 | 11 | +27% |
| Invasive Bacterial Disease | Meningococcal, invasive | 1 | 2 | -50% |
| Enteric Diseases | <i>E. coli</i> , Shiga toxin-producing | 45 | 36 | +25% |
| | Campylobacteriosis | 272 | 251 | +8% |
| | Salmonellosis | 186 | 136 | +37% |
| | Shigellosis | 251 | 8 | >1000% |
| | Giardiasis | 72 | 92 | -22% |
| | Cryptosporidiosis | 164 | 115 | +43% |
| | Hepatitis A | 2 | 1 | +100% |
| Vector-borne Diseases | Animal Rabies | 25 | 27 | -7% |
| | Tularemia | 24 | 7 | +243% |
| | Rocky Mountain Spotted Fever | 3 | 1 | 0% |
| | Malaria (imported) | 2 | 5 | n/a |
| | Hantavirus Pulmonary Syndrome | 0 | 0 | 0% |
| | Lyme disease | 4 | 4 | 0% |
| | West Nile Virus disease | 35 | 57 | -38% |
| Other Diseases | Legionellosis | 8 | 6 | -30% |
| | Additionally, the following were reported: Chicken Pox (20); CRE (16); Dengue Fever (1); Hep B, acute (2); Hep B, chronic (30); Hep C (418); MRSA, invasive (114); Q Fever (4); Typhoid (1). | | | |

Communicable diseases are obligatorily reportable by physicians, hospitals, laboratories, and institutions. The **Reportable Diseases List** is found at <http://doh.sd.gov/diseases/infectious/reporting-communicable-diseases.aspx> or upon request. Diseases are reportable by telephone, fax, mail, website, or courier.

Secure website: www.state.sd.us/doh/diseasereport

Telephones: 24 hour answering device 1-800-592-1804; for a live person at any time call 1-800-592-1861; after hours emergency 605-280-4810.

Fax 605-773-5509.

Mail in a sealed envelope addressed to the DOH, Office of Disease Prevention, 615 E. 4th Street, Pierre, SD 57501, marked "Confidential Medical Report".