SOUTH DAKOTA DEPARTMENT OF HEALTH

PUBLIC HEALTH BULLETIN

VOLUME 26 NUMBER 3 **JUNE 2014**

Heterosexual Syphilis Outbreak in North and South Dakota

There is an **ongoing heterosexual syphilis outbreak in North and South Dakota**. This is an acute outbreak with approximately 65% of all cases staged as primary or secondary syphilis. Of particular concern, there was recently an infant born to an untreated mother. This infant was identified as the first case of congenital syphilis that South Dakota has had in decades.

South Dakota has not seen this many cases of Syphilis in over 50 years. In 2012, there were 21 early stage cases (less than 1 yr. in duration), mainly in men who have sex with men. In 2013, there were 49 early stage cases, with a shift towards heterosexual transmission. And now, in 2014, there are 46 early stage cases, primarily associated with heterosexual transmission.

All persons that have a positive Chlamydia or Gonorrhea test are also at risk for Syphilis and HIV, and should thus also be tested for these infections. Identifying and treating infected individuals is the cornerstone of syphilis control. **Given the recent case of congenital syphilis, the Department of Health is asking all providers to take the following actions until further notice**:

1) **When you see a clear sign of syphilis—treat first, test second.** Familiarize yourself with the signs and symptoms of primary and secondary syphilis. If you notice a symptom of syphilis on exam (e.g., a chancre, truncal rash, condyloma lata, alopecia, etc.), immediate treatment is appropriate based on clinical findings alone. Treatment information can be found in CDC's STD Treatment Guidelines. Tests for syphilis can be ordered the same day, but they may be negative if the patient has newly acquired syphilis and has not had time to mount an immune response.

2) **Add a syphilis screening test (RPR) to any panel of STD or HIV testing that you are ordering** for a patient, regardless of whether the patient presents with clinical signs of syphilis.

3) ***All* pregnant women should be screened for syphilis at least *three* times during the course of pregnancy**. **This screening recommendation is made by the CDC in areas of high Syphilis morbidity. Currently South Dakota qualifies as an area with high Syphilis morbidity.**
   a. **Screen 1** should occur at a patient's **first prenatal visit**;
   b. **Screen 2** should occur in the **third trimester**; and
   c. **Screen 3** should occur on the day **of delivery**.

   Three screens are essential, even if the first screen is negative. If a woman tests positive, refer to the CDC's STD Treatment Guidelines for information on treating both mother and child. **Any woman who delivers a stillborn infant after 20 weeks' gestation should be tested for Syphilis. No infant should leave the hospital without the serological status having been determined at least once during pregnancy.**

4) **Pregnant women with syphilis must *always* be treated with penicillin.** Benzathine penicillin G is the recommended treatment regimen for adults diagnosed with early syphilis. An alternative therapy may be

indicated for patients with a penicillin allergy. Pregnant women, however, must *always* be treated with penicillin. Pregnant women with a serious penicillin allergy *must* undergo a penicillin desensitization protocol. For more information, refer to the CDC's STD Treatment Guidelines or give the State Health Department STD program a call.

4) **If a patient presents as a 'contact' (or sexual partner) of a primary, secondary, or early latent syphilis case, CDC recommends that penicillin treatment (2.4 million units of IM Benzathine penicillin G) should be administered presumptively.** Following presumptive treatment, serologic testing for syphilis should be ordered to confirm your patient's status. Presumptive treatment is warranted at this time for two reasons—1) the incubation period of syphilis is such that many recently exposed persons will not have seroconverted and 2) efforts to locate and follow-up with contacts have proven challenging given the increased case-load that we are experiencing.

Full STD Treatment Guidelines can be found at: http://www.cdc.gov/std/treatment/2010/default.htm. The STD Treatment Guidelines 'app' for Android and Apple devices can also be found at the website.

	Recommended	Dose/Route	Alternative
Primary, secondary, or early latent < 1year	Benzathine Penicillin G	2.4 million unites IM in a single dose	Doxycycline 100 mg BID for 14 days OR Tetracycline 500 mg QID for 14 days
Latent > 1year, latent of unknown duration	Benzathine Penicillin G	2.4 million units IM in 3 doses each at 1 week intervals (7.2 million units total)	Doxycycline 100 mg BID for 28 days OR Tetracycline 500 mg QID for 28 days
Pregnancy	Benzathine Penicillin G	Dose will depend on stage of infection	
Neurosyphilis	Aqueous crystalline Penicillin G	3 to 4 million units IV every 4 hours for 10-14 days (18-24 million units/day)	Procaine Penicillin G 2.4 MU IM ix daily PLUS Probenecid 500 mg orally 4x/day, both for 10-14 days
Congenital Syphilis	Aqueous crystalline Penicillin G OR Procaine Penicillin G	100,000-150,000 units/kg/day (50,000 units/kg/dose IV every 12 hours) during the first 7 days of life and every 8 hours thereafter for a total of 10 days 50,000 units/kg/dose IM in a single daily dose for 10 days	

There is an online CDC Self-Study Module for Clinicians (1.0 CME, CNE, or CEU) that has proved to be beneficial for many clinicians. This module can be found at http://www2a.cdc.gov/stdtraining/self-study/default.htm. There are also some clinical training slides available as well, http://www.cdc.gov/Std/training/clinicalslides/default.htm.

The Department of Health STD Program is available to serve as a resource for patient or partner management during traditional business hours. The South Dakota STD program is also able to provide condoms, medications, and a variety of STD educational materials for your patients. Included are some syphilis clinical pictures that may be helpful when discussing a history of symptoms with a patient. These picturess are available in larger laminated flip cards. If you would like any of the above mentioned items your site, please contact Amanda Gill, South Dakota Department of Health, STD Coordinator, at 605-773-4794 or Amanda.Gill@state.sd.us.

An intensive up-front effort to diagnose and treat patients with syphilis—and their partners—may prevent *many* future cases of adult and congenital syphilis.

Oral Cancer in South Dakota

By the Oral Health Program and South Dakota Cancer Registry, South Dakota Department of Health

During 2007-2011, there was an average of 100 (68 men and 32 women) new invasive cases of oral cancer diagnosed among South Dakota residents per year. In South Dakota, an average of 18 people died annually from oral cancer spanning these years.

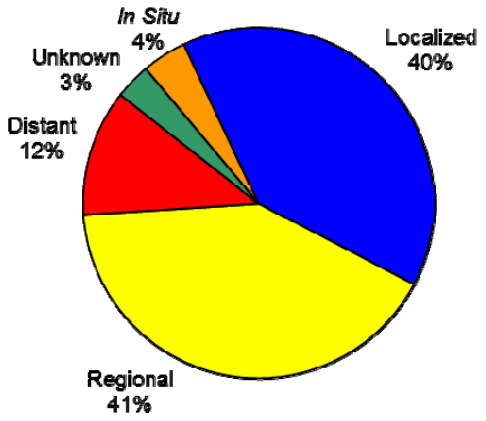
Incidence 2011		Mortality 2011	
Number of cases		Number of deaths	
Total	116	Total	19
Males	74	Males	12
Females	42	Females	7
White	110	White	17
American Indian	6	American Indian	2
Median age at diagnosis	63 yrs	Median age at death	70 yrs
Mode	54 yrs	Mode	51 yrs
Age range at diagnosis	17-93 yrs	Age range at death	46-91 yrs
SD age-adjusted incidence rate	12.4	SD age-adjusted death rate	1.9
US SEER age-adjusted incidence rate (2011)	10.6	US SEER age-adjusted death rate (2010)	*2.5

Rates per 100,000 U.S. 2000 Standard Population and S.D. 2011 Estimated Population / *2011 U.S. SEER age-adjusted death rate not available
Source: South Dakota Department of Health

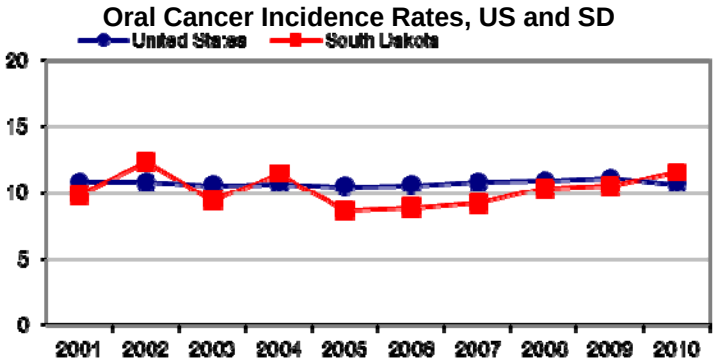
The graph at the right displays the SEER Summary Stage at diagnosis for 2011 oral cancer cases. As shown , 44% of the oral cancer cases were diagnosed at an early stage of development. Prognosis at this stage is significantly better than when it is diagnosed in a distant stage.

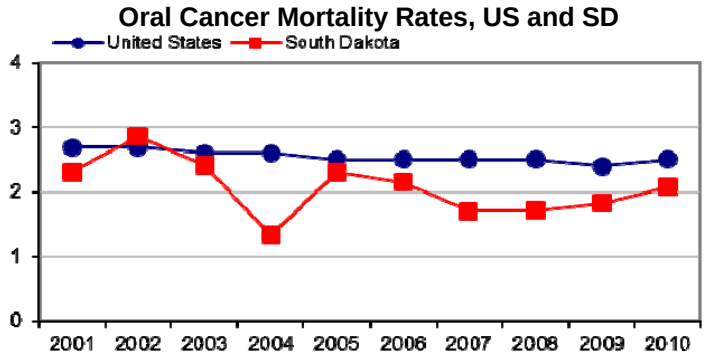
See the graphs below for the age-adjusted oral cancer incidence rates and oral cancer mortality rates for the United States and South Dakota for 2001-2010.

For additional information, please contact Kay Dosch, SD Cancer Registry Coordinator, at 605-773-6345 or 800-592-1861 or see the website at http://doh.sd.gov/SDCR/ for the entire oral cancer monograph.



Source: South Dakota Department of Health





HIV Testing

In preparation for National HIV Testing day on June 27th, it is recommended that clinicians familiarize themselves with the newly released changes in HIV case definition. CDC and the Council of State and Territorial Epidemiologists (CSTE) have revised and combined the surveillance case definitions for human immunodeficiency virus (HIV) infection into a single case definition for persons of all ages. The revisions were made to address multiple issues, the most important of which was the need to adapt to recent changes in diagnostic criteria. Laboratory criteria for defining a confirmed case now accommodate new multitest algorithms, including criteria for differentiating between HIV-1 and HIV-2 infection and for recognizing early HIV infection. Clinical (non-laboratory) criteria for defining a case for surveillance purposes have been made more practical by eliminating the requirement for information about laboratory tests.

Revised Surveillance Case Definition

Criteria for a Confirmed Case

Criteria for a confirmed case can be met by either laboratory evidence or clinical evidence, as described below. Laboratory evidence is preferred over clinical evidence.

1.1: Persons Aged ≥18 Months and Children Aged <18 Months whose Mothers were Not Infected

1.1.1: Laboratory Evidence

Laboratory criteria require reporting of the date of the specimen collection for positive test results in multitest algorithms or stand-alone virologic tests and enough information about the tests to determine that they meet any of the following criteria:

- A multitest algorithm consisting of
    - A positive (reactive) result from an initial HIV antibody or combination antigen/antibody test, and
    - An accompanying or subsequent positive result from a supplemental HIV test different from the initial test.

Because the antigenic constituents and test principles are proprietary information that might not be publicly available for some tests, tests will be assumed to be orthogonal if they are of different types. For example:

- One test is a combination antigen/antibody test and the other an antibody-only test.
- One test is an antibody test and the other a NAT.
- One test is a rapid immunoassay (a single-use analytical device that produces results in <30 minutes) and the other a conventional immunoassay.
- One test is able to differentiate between HIV-1 and HIV-2 antibodies and the other is not.

Tests will also be assumed to be orthogonal if they are of the same type (e.g., two conventional immunoassays) but made by different manufacturers.

1.1.2: Clinical (Non-laboratory) Evidence

Clinical criteria for a confirmed case (i.e., a "physician-documented" diagnosis) are met by the combination of:

- A note in a medical record by a physician or other qualified medical-care provider that states that the patient has HIV infection, and
- One or both of the following:
    - The laboratory criteria for a case were met based on tests done after the physician's note was written (validating the note retrospectively).
    - Presumptive evidence of HIV infection (e.g., receipt of HIV antiretroviral therapy or prophylaxis for an opportunistic infection), an otherwise unexplained low CD4+ T-lymphocyte count, or an otherwise unexplained diagnosis of an opportunistic illness.

1.2: Children Aged <18 Months Born to Mothers Who Have an Unknown Infection Status or Were Known to be Infected

1.2.1: Laboratory Evidence

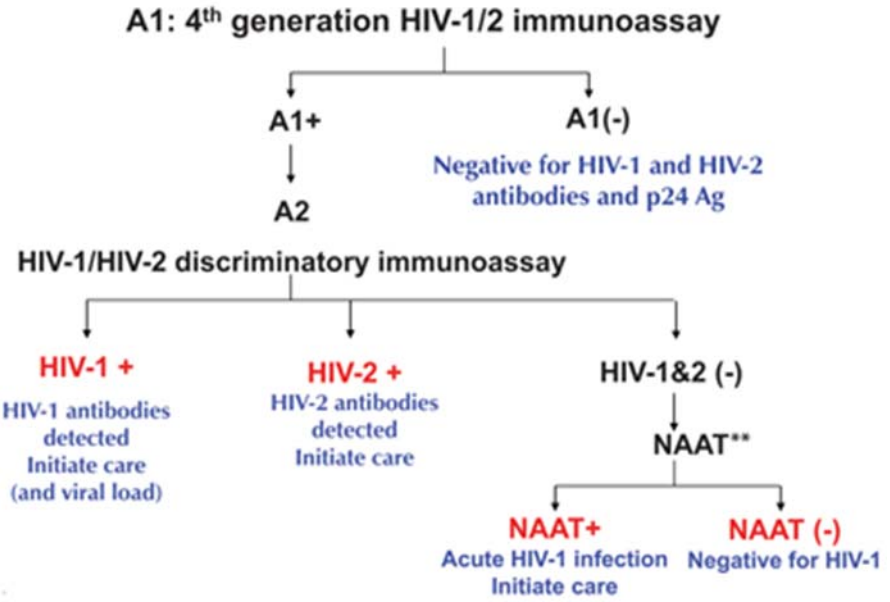
A child aged <18 months is categorized for surveillance purposes as HIV infected if all of the following criteria are met:

- Positive results on at least one specimen (not including cord blood) from any of following HIV virologic tests:
- HIV-1 NAT (DNA or RNA)
    - HIV-1 p24 antigen test, including neutralization assay for a child aged >1 month
    - HIV isolation (viral culture) or
    - HIV nucleotide sequence (genotype).
    - The test date (at least the month and year) is known.
- One or both of the following:
    - Confirmation of the first positive result by another positive result on one of the above virologic tests from a specimen obtained on a different date, or
    - No subsequent negative result on an HIV antibody test and no subsequent negative result on an HIV NAT before age 18 months.

1.2.2: Clinical Evidence

- The same criteria as in section 1.1.2 or
- All three of the following alternative criteria:
    - Evidence of perinatal exposure to HIV infection before age 18 months
    - A mother with documented HIV infection, or
    - A confirmed positive test for HIV antibody (e.g., a positive initial antibody test or antigen/antibody test, confirmed by a supplemental antibody test) and a mother whose infection status is unknown or undocumented.
    - Diagnosis of an opportunistic illness indicative of stage 3.
    - No subsequent negative result on an HIV antibody test.

Current recommended HIV testing algorithm:



Definitively Uninfected

No positive HIV NAT (RNA or DNA), and at least one of the following criteria:

- At least two negative HIV NATs from specimens obtained on different dates, both of which were at age ≥1 month and one of which was at age ≥4 months.
- At least two negative HIV antibody tests from specimens obtained on different dates at age ≥6 months.

Presumptively Uninfected

Criteria for definitively uninfected with HIV are not met.

At least one of the four following laboratory criteria are met:

At least two negative NATs from specimens obtained on different dates, both of which were at age ≥2 weeks and one of which was at age ≥4 weeks.

One negative NAT (RNA or DNA) from a specimen obtained at age ≥8 weeks.

One negative HIV antibody test from a specimen obtained at age ≥6 months.

If criteria for HIV infection had initially been met by one positive HIV NAT test then it must have been followed by at least two negative test results from specimens obtained on different dates, one of which is:

A NAT test from a specimen obtained at age ≥8 weeks, or
An HIV antibody test from a specimen obtained at age ≥6 months, and
No subsequent positive NAT.

Criteria for Classifying the Stage of HIV Infection

A confirmed case that meets the criteria for diagnosis of HIV infection can be classified in one of five HIV infection stages (0, 1, 2, 3, or unknown). Acquired immunodeficiency syndrome (AIDS) is classified as stage 3. Criteria for stage 3 have been simplified by eliminating the need to differentiate between definitive and presumptive diagnoses of opportunistic illnesses.

Stage 0 indicates early HIV infection, inferred from a negative or indeterminate HIV test result within 6 months of a confirmed positive result, and these criteria supersede and are independent of the criteria used for later stages.

Stages 1, 2, and 3 are based on the CD4+ T-lymphocyte count. If the CD4+ count is missing or unknown, the CD4+ T-lymphocyte percentage of total lymphocytes can be used to assign the stage. Cases with no information on CD4+ T-lymphocyte count or percentage are classified as stage unknown. If a stage-3–defining opportunistic illness has been diagnosed, then the stage is 3 regardless of CD4 T-lymphocyte test results, unless the criteria described for stage 0 are met. CD4+ T-lymphocyte counts or percentages at the time of diagnosis allow classification of cases by stage at diagnosis. Subsequent CD4+ T-lymphocyte counts or percentages help monitor disease progression and whether the person is receiving on-going care.

Acute HIV Infection

The risk of transmitting HIV to others is high during acute infection. Therefore, risk reduction measures are especially important during this time. Initiating antiretroviral treatment during acute HIV infection may: -reduce the HIV viral set point and preserve key immune response functions that may slow disease progression, and -reduce the likelihood of transmission to others.

These advantages may be outweighed by practical concerns about an individual patient's ability or readiness to take multiple medications. Decisions about treatment are individualized. However, with acute infections, **initiating care with an Infectious Disease clinician is crucial and very time□sensitive.**

USPSTF Recommendations

The U.S. Preventive Services Task Force (USPSTF) recommends that clinicians screen adolescents and adults ages 15-65 years for HIV infection. Younger adolescents and older adults who are at increased risk should also be screened. **This is a grade A recommendation.** The USPSTF recommends that clinicians screen all pregnant women for HIV, including those who present in labor whose HIV status is unknown. **This is a grade A recommendation.** Encourage all medical staff to implement routine, opt-out HIV testing policies in their facilities. For more information, contact April Ivey, HIV Prevention and Surveillance Program Manager, by email at april.ivey@state.sd.us or by phone at 605-773-3737.

Sioux Falls physician named CDC Childhood Immunization Champion

Dr. Jennifer Schriever, Sioux Falls, has been named a *Childhood Immunization Champion* by the federal Centers for Disease Control and Prevention. The champion award recognizes individuals who go above and beyond to promote immunization among children in their communities. The awards were announced in conjunction with National Infant Immunization Week, April 26-May 3.

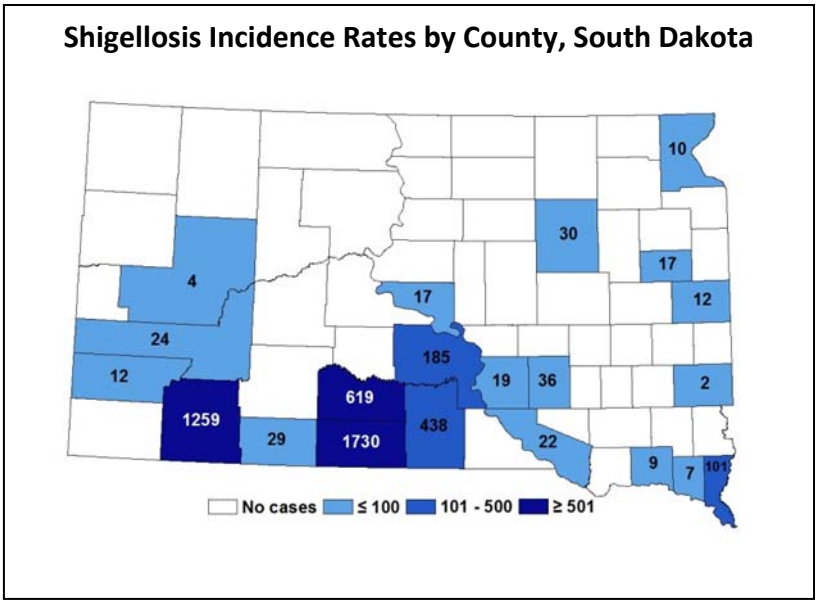
Under Dr. Schriever's leadership the Sanford Clinic Family Medicine has immunized more than 90 percent of its patients aged 2 and under for the last three years. As a result of her efforts the clinic now reviews each patient's immunization status at each visit to take make sure necessary vaccines are given on time.

Dr. Schriever's practice was one of just 20 family medicine practices in the country selected to participate in the American Academy of Family Physicians adolescent immunizations project. As part of that project, the clinic is a pilot site for Sanford Health in using technology to identify patients in need of immunizations and following up with messages form their primary care providers about the importance of timely immunization. The goal is to increase immunization rates for patients of all ages.

Dr. Schriever serves on Sanford Health's leadership development committee, is an educator for family medicine medical students and nurse practitioners at USD, and mentors residents providing prenatal care in the obstetrics clinic. She is board-certified by the American Board of Family Practice and is an advanced life support in obstetrics instructor.

Read Dr. Schriever's profile and learn more about the award program at http://www.cdc.gov/vaccines/champions.

Shigellosis on the rise in South Dakota

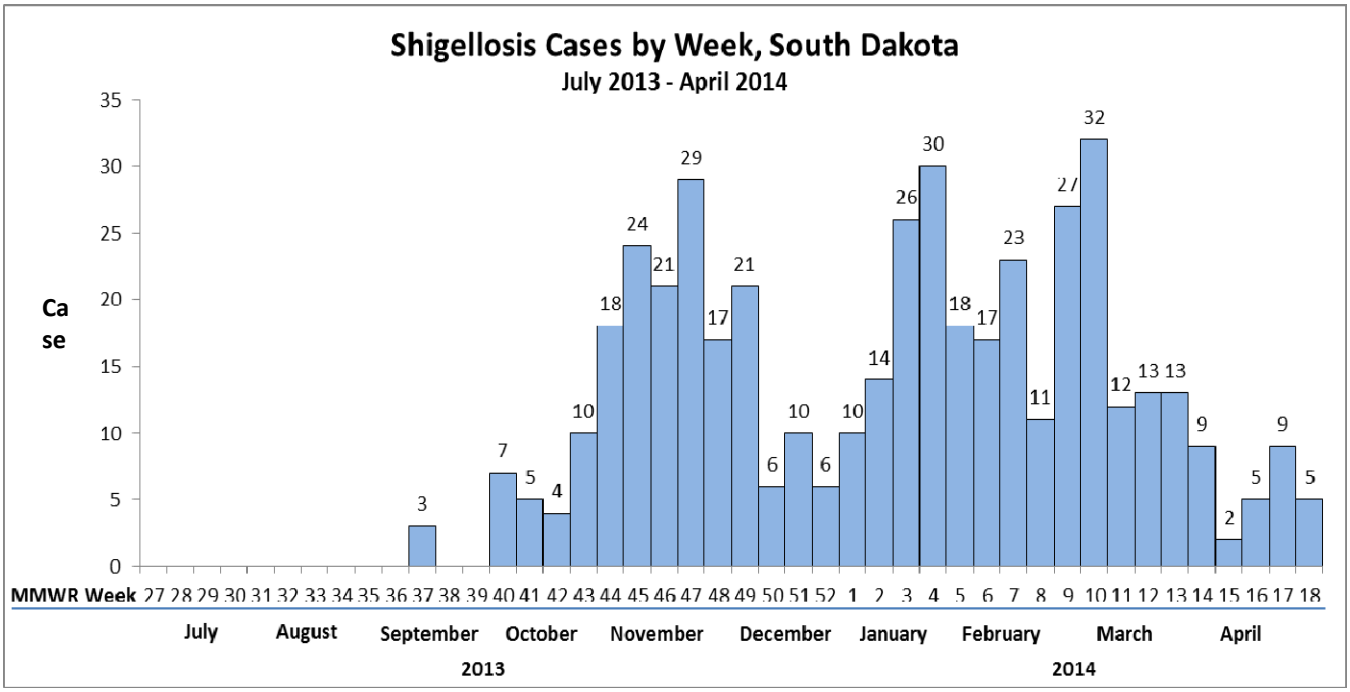


South Dakota is experiencing a large increase in reported cases of shigellosis, a bacterial infection caused by *Shigella* species. Since September of 2013, 457 laboratory confirmed and probable cases of *Shigella sonnei* have been reported from several communities in southern South Dakota. Counties with the highest incidence (cases per 100,000 population) include Todd (1730), Shannon (1259), Mellette (619), Tripp (438) and Lyman (185). The majority of cases have occurred in young children, with 72% of cases occurring in children ≤ 12 years old.

Shigella bacteria are highly contagious and can cause outbreaks quickly. The bacteria are spread easily from person-to-person through the fecal-oral route. Minor lapses in hand and toilet hygiene allow widespread transmission, particularly in daycare and other child care settings. The incubation period is short, usually 1 to 3 days. Patients may experience mild to severe diarrhea, often with fever and traces of blood or mucous in the stool. Some infections may be asymptomatic. To prevent dehydration patients should drink plenty of fluids. Most patients will recover completely within 4 to 7 days without treatment. However, antimicrobial therapy may help shorten the duration of diarrhea and hasten eradication of the organism from stool. Antibiotic resistance has become a problem in recent years. If treatment is indicated, antimicrobial susceptibility testing of clinical isolates should be performed.

Most infected people may return to work or school when their diarrhea ceases, provided that they carefully wash their hands after toilet visits. However, food handlers, children and staff in daycare, and health care workers must be excluded from their duties until two stool specimens collected at least 24 hours apart are culture negative. If antibiotics were taken, the initial culture should be obtained at least 48 hours after the last dose.

Shigellosis often demonstrates a cyclic pattern characterized by periods with few cases followed by large community-wide outbreaks. Several outbreaks have been fueled by transmission in child care settings that rapidly spilled over into families within a few days. In the recent past, South Dakota experienced large outbreaks of shigellosis back in 2001 and 2006. In comparison, only 11 cases were reported in 2012. Prompt reporting of cases to the Department of Health is essential to quickly implement prevention and control measures and disrupt transmission of *Shigella* within a community.



Preventing Shigellosis Infections

- Wash hands with soap carefully and frequently, especially after going to the bathroom, after changing diapers, and before preparing foods or beverages
- Keep children with diarrhea out of child care settings
- Dispose of soiled diapers properly
- Disinfect diaper changing areas
- Supervise handwashing of toddlers and small children after they use the toilet
- Do not prepare food for others while ill with diarrhea
- Avoid swallowing water from ponds, lakes, or untreated pools
- Do not swim if you have diarrhea

A shigellosis fact sheet and web links are found at:
https://doh.sd.gov/diseases/infectious/diseasefacts/Shigellosis.aspx

References and Resources

CDC, National Center for Emerging and Zoonotic Infectious Diseases, Division of Foodborne, Waterborne and Environmental Diseases. http://www.cdc.gov/nczved/divisions/dfbmd/diseases/shigellosis/

Heymann DL (2008). *Control of communicable diseases manual* (19th ed.). Washington, DC: American Public Health Association.

Pickering LK, Baker CJ, Kimberlin DW, Long SS (2012). *Red book: 2012 report of the Committee on Infectious Diseases* (29th ed.). Elk Grove Village, IL: American Academy of Pediatrics.

Author: Dustin Ortbahn, Disease Surveillance Coordinator, South Dakota Department of Health

South Dakota Department of Health – Infectious Disease Surveillance

Selected Morbidity Report, 1 January – 30 April 2014

(provisional numbers) see http://doh.sd.gov/statistics/disease-surveillance/

	Disease	2014 year-to-date	5-year median	Percent change
Vaccine-Preventable Diseases	Diphtheria	0	0	n/a
	Tetanus	0	0	n/a
	Pertussis	23	9	+156%
	Poliomyelitis	0	0	n/a
	Measles	0	2	n/a
	Mumps	0	2	n/a
	Rubella	0	0	n/a
	Haemophilus influenza type b	0	0	n/a
Sexually Transmitted Infections and Blood-borne Diseases	HIV infection	16	7	+129%
	Hepatitis B, acute	1	0	+100%
	Chlamydia	1388	1177	+18%
	Gonorrhea	250	191	+31%
	Syphilis, early	42	1	_+>1000%
Tuberculosis	Tuberculosis	4	6	-33%%
Invasive Bacterial Diseases	Meningococcal, invasive	2	0	+100%
	Invasive Group A *Streptococcus*	0	0	n/a
Enteric Diseases	*E. coli*, Shiga toxin-producing	5	5	0%
	Campylobacteriosis	36	58	-38%
	Salmonellosis	38	44	-14%
	Shigellosis	263	1	+>1000%
	Giardiasis	28	26	+8%
	Cryptosporidiosis	24	31	-23%
	Hepatitis A	0	0	0%
Vector-borne Diseases	Animal Rabies	5	11	-55%
	Tularemia	0	0	0%
	Rocky Mountain Spotted Fever	0	0	0%
	Malaria (imported)	0	0	0%
	Hantavirus Pulmonary Syndrome	0	0	n/a
	Lyme disease	0	0	0%
	West Nile Virus disease	0	0	0%
Other Diseases	Legionellosis	1	1	0%
	Streptococcus pneumoniae, invasive	0	0	0%
	Additionally, the following were reported: Chicken Pox (11); CRE (1); Hep B, chronic (21); Hep C (192); HUS (1); MRSA, invasive (18); Q Fever (3)			

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".

3,200 copies of this Bulletin were printed by the Department of Health at a cost of $0.__ per copy.