REPORTING REQUIREMENTS AND PROTOCOL GUIDELINES FOR INFECTION CONTROL OF HOSPITALIZED TB PATIENTS

The purpose of this edition of the Epi - News is to assist hospitals in Washoe County to report suspect or confirmed tuberculosis (TB) disease and prevent disease transmission by initiating and maintaining isolation of infectious patients.

Guidelines are based on Nevada Revised Statutes (NRS), Nevada Administrative Codes (NAC) and Centers for Disease Control and Prevention (CDC) published recommendations for TB control. Additional information for health care providers is available on the Washoe County Health District (WCHD) TB Prevention and Control Program website at: http://www.washoecounty.us/health/cchs/tbp.html.

NRS defines the “Health Authority” as “the district health officer in a district, or his designee, or, if none, the State Health Officer, or his designee.” Washoe County Health District serves as the health authority in Washoe County with the following excerpted responsibilities germane to this bulletin: (Added to NRS by 1989, 294) NAC 441A.355 Active tuberculosis: Duties and powers of health authority. (NRS 441A.120).

1. The health authority shall investigate each report of a case having active tuberculosis or suspected case considered to have active tuberculosis to confirm the diagnosis, to identify any contacts, to identify any associated cases, to identify the source of infection and to ensure that the case or suspected case is under the care of a health care provider who has completed a diagnostic evaluation and has instituted an effective course of medical treatment.

2. The health authority shall, pursuant to NRS 441A.160, take all necessary measures within his authority to ensure that a case having active tuberculosis completes an effective course of medical treatment or is isolated or quarantined to protect the public health. (Added to NAC by Bd. of Health, eff. 1-24-92; A by R084-06, 7-14-2006)

REPORTING:

Nevada Revised Statute 441A.150 mandates that tuberculosis is a reportable disease and Nevada Administrative Code 441A.230 and 441A.235 specifies procedural requirements. Health care providers, medical facilities, laboratories, and all others who know of, or provide services to a person who has, or is suspected of having tuberculosis, are required by law to report the case to the local health authority.

If you are a health care provider, medical facility, or laboratory in Washoe County, please report all confirmed and suspected cases of active tuberculosis to the Washoe County Health District Communicable Disease Program by fax at 328-3764 or phone at 328-2447. For faxed reports a Confidential Case Report form is available on line at: http://www.co.washoe.nv.us/repository/files/4/Blank%20Report %20Form.pdf.

The following information should be included when reporting a confirmed or suspected case of tuberculosis to the local health authority:

- Patient’s full name
- Address
- Telephone number
- Date of birth (if known)
- Occupation (if known)
- Employer (if known)
- Date of disease onset
- Date of diagnosis
- Health care provider’s name & contact information
- Any other information requested by the health authority, if available

PREVENTING DISEASE TRANSMISSION

Factors that influence the likelihood of TB transmission:

- The Person with TB disease -
  - AFB smear positive
  - Cavitary lesions on CXR
  - The TB strain – some strains are more virulent than others
  - Lack of or inadequate cough hygiene
  - Undiagnosed TB disease (it is believed that most TB transmission occurs before TB is diagnosed and effective treatment is started.)
  - Inadequate treatment
  - Has been on effective therapy less than 2 weeks
  - Over 10 years of age (children under 10 generally do not have the lung capacity to expel TB bacteria into the air)

- Exposure Environment
  - Small enclosed rooms
  - Limited air flow
  - Limited sunlight

- Exposure Time
  - The more time spent with the sick person the greater the risk of infection
  - Time spent is cumulative

- The Contact is:
  - Under 5 years of age
  - HIV positive
  - Other immunocompromising conditions

Nevada Administrative Code 441A.380 section 5 requires that “A health care provider shall not certify that a person with active tuberculosis is not infectious unless the health care provider has obtained not less than three consecutive negative sputum AFB smears which were collected on separate days.”

Hospital infection control programs are encouraged to keep patients suspected or confirmed to have infectious tuberculosis in airborne infection isolation (AI) until at least 3 consecutive acid fast bacilli (AFB) negative smears have been collected, at

Please share this document with all physicians & staff in your facility/office.
least 8 hours apart, with at least one specimen an early morning specimen; the client has been on effective therapy at least 2 weeks and is improving clinically.

Respiratory therapy assisted/observed sputum collection is recommended when clinically indicated, e.g., when a patient has negative AFB sputum smears despite positive AFB smears from bronchial washings, or negative sputa smears in the presence of cavity disease.

Hospitalized patients who have drug-susceptible TB disease that are deemed medically stable (including patients with positive AFB sputum smear results indicating pulmonary TB disease) may be discharged from the hospital to their home (private single dwelling residence, not a congregate setting) before converting AFB sputum smear results to negative if all of the following criteria are met:

Criteria for Hospital Discharge to Home: Patients with Suspected or Confirmed Drug-Susceptible Tuberculosis

- A specific plan exists for follow-up care with the local tuberculosis (TB) control program.
- The patient has been started on a standard multidrug antituberculosis treatment regimen and directly observed therapy (DOT) has been arranged.
- No children aged <5 years or persons with immunocompromising conditions are present in the household.
- All immunocompetent household members have been previously exposed to the patient.
- The patient is willing to remain inside the home except for healthcare-associated visits until the patient has negative acid-fast bacilli (AFB) sputum smear results.

The TB Program can assist with resources for homeless or indigent patients stable for discharge but still infectious when the required conditions are met.

If a person is suspected or confirmed to have multi-drug resistant TB, isolation requirements are extended until cultures are consistently negative (at least 3 consecutive negative cultures).

**DIAGNOSTICS: AFB SMEAR AND AFB CULTURE**

AFB smear and AFB cultures provide valuable diagnostic information, indicate the degree of infectiousness, aid the determination of an appropriate drug regimen and the length of treatment and demonstrate response to treatment.

All clinical specimens suspected of containing mycobacteria should be cultured for the following reasons:

- Culture is much more sensitive than microscopy and is able to detect as few as 10 bacteria/ml of material.
- Growth of the organism is necessary for precise species identification.
- Current drug susceptibility testing methods require pure culture of the organisms, and
- Genotyping of cultured organisms may be useful to identify epidemiological links between patients or to detect laboratory cross-contamination.

In adults, the sensitivity of sputum culture is 80% to 85% with a specificity of approximately 98%. The sensitivity of sputum culture is much lower in children, although the rate may be higher in HIV-infected pediatric patients, adolescents and children with adult type disease.

Extrapulmonary Tuberculosis: Tissue specimens for the culture of *M. tuberculosis* should be placed in a transport medium or a normal saline solution. Formalin or other preservatives should not be used because these solutions kill or inhibit the growth of *M. tuberculosis*.

- **Baseline:**
  - Collect 3 sputa specimens, preferably morning, 24 hours apart. Alternatively 3 specimens may be collected at least 8 hours apart, with at least one specimen an early morning specimen.

- **Monitoring:**
  - To determine when a patient is no longer infectious: Collect one specimen every 1-2 weeks until an AFB smear negative specimen is produced. Collect 2 additional specimens. If the 2nd and 3rd specimens are also AFB smear negative the patient may be considered non-infectious. If either the 2nd or 3rd specimen is AFB smear positive return to collecting one specimen/week. Repeat this process until 3 consecutive negative AFB smears have been produced.
  - To determine response to therapy: cultures are required at a minimum of once a month until at least two consecutive specimens are culture negative. Cultures that remain positive beyond the 2nd month of treatment are indicative of either drug resistance or mal-absorption.
  - Patients with a high bacillary load (4+AFB) may continue to have positive AFB smears, but negative cultures after months of treatment. It is thought that these organisms are dead. However, repeat cultures should be obtained to confirm the earlier culture result was correct and not a false negative.

Please contact Diane Freedman, RN, PHN, TB Coordinator for the Washoe County Health District, at 775-785-4787 for any questions.

**REFERENCES**

1. [http://www.leg.state.nv.us/](http://www.leg.state.nv.us/)
2. Francis J. Curry National Tuberculosis Center; [http://www.nationaltbcenter.edu](http://www.nationaltbcenter.edu); updated March 2004.
5. CDC, MMWR Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Facilities, December 30, 2005/Vol.54/No.RR-17, pp 18-20.
7. Department of Health and Human Resources CDC, Core Curriculum on Tuberculosis What the Clinician Should Know. 4th Ed. 2000, p 43.