Mayo Clinic Center for Tuberculosis

Public Health and the Role of Public Health Nurses

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Disclosures

- No relevant financial relationships
- No off-label investigational uses
Objectives

• Explain the role of public health in the management of tuberculosis

• Describe activities of public health nurses in the prevention and control of tuberculosis
Surveillance – Estimate Magnitude

- 1/3 of the world’s population infected
- 9.0 million new TB cases in 2013
- 1.5 million deaths from TB in 2013
- TB is 2\textsuperscript{nd} highest cause of death from an infectious disease in the world, behind HIV.
- Rising incidence of drug-resistant disease (480,000 in 2013)
- Billions of dollars in lost productivity
Surveillance—Geographic Distribution
Public Health Goals for TB

• Stop/prevent transmission
• Prompt, appropriate treatment to prevent drug resistance
• Minimizing risk of death & disability
• Reducing transmission of *M. tuberculosis* to other persons
• Completion of effective treatment and cure of illness
Legal Authority & Responsibility

• **Local** public health has the legal authority and responsibility for TB control in WI

• **State** public health has the responsibility and authority to control communicable diseases, including TB – but only steps in if local public health is unwilling or unable.
Working Together

Provider  Local Public Health

Client

State TB Program
Documentation for Tuberculosis

- Wisconsin Electronic Disease Surveillance System (also known as “WEDSS”)
  - Used for ALL communicable disease investigations in Wisconsin.
- Local Health Department charting system (whether electronic or paper)
- Policies and Procedures regarding TB
- Monitoring Flow Sheets (to assess adherence, side effects, dose count)
- “If it isn’t written, then it wasn’t done.”
TB Issues in WI… Activities by Local Public Health

- TB prevention
- TB screening and testing
- TB infection (latent TB infection or LTBI)
- Suspect TB disease
- TB disease
TB Prevention—Activities by Local Public Health

State and Local Health Departments work with community groups and clinicians to prevent TB by

- Identifying high-risk groups
- Collaborating to
  - Educate
  - Screen
  - Test
  - Treat
TB Screening and Testing—Local Public Health Activities

• Conduct screening and testing programs for high risk groups, contact investigations

• Advise clinicians and facilities on appropriate tests and screening forms

• Advise clinicians and facilities on local TB epidemiology (as in “the last TB case we had was in 2011, an itinerant farm worker, so we are a very low risk area”)
TB Issues in WI… Activities by Local Public Health

• TB prevention
• TB screening and testing
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• TB disease
LTBI—Activities by Local Public Health

- Identify persons with positive tests at screening events
  - Arrange medical evaluation and CXR
  - Receive medication orders from clinicians
  - Evaluate orders for appropriateness and completeness
  - Contact patient to assess understanding, willingness to proceed with treatment
LTBI, continued

• Determine whether client needs sputum samples before treatment
  • If symptomatic with positive screening and/or positive CXR, client may be ACTIVE case.
• Determine insurance status
  • Wisconsin has “TB Dispensary” to help cover costs at MA rate.
• Get baseline medical history at first visit to assess for comorbidities, potential issues with treatment
LTBI, continued

• Educate client regarding TB infection, potential side effects, when to call nurse, when to hold meds (if self-administered)
• Provide written information in appropriate language on TB and medications
• Ensure presence of interpreter for non-English-speaking clients
LTBI, continued

• Coordinate appointments for labs or exams
• Monitor client for potential side effects either weekly or monthly (depending on treatment regimen.
• Consult with clinician and/or state program for side effects or problems with treatment
• Be the cheerleader/coach
• Document all concerns that are unusual into WEDSS to enhance discussion with TB Program.
What is the purpose of LTBI treatment?

• Medication is given to people who have Latent Tuberculosis Infection to prevent the progression to TB disease.
Options for treatment for LTBI

- Rifapentine 900 mg + Isoniazid 900 mg once weekly X 12 weeks (DOT is required)
  - Do NOT give Rifapentine to persons who wear dentures—permanent staining will occur.
- Isoniazid 300 mg daily X 9 months (PHN meets monthly with client to provide meds)
- Rifampin 600 mg daily X 4 months (PHN meets monthly with client to provide meds)
TB Issues in WI… Activities by Local Public Health

• TB prevention
• TB screening and testing
• TB infection (latent TB infection or LTBI)
• Suspect TB disease
• TB disease
Suspect TB disease

• Get call from clinician re suspect within jurisdiction
  • Obtain as much information as possible
  • Contact State TB Program as needed re recommendations for additional testing

• Enter patient into WEDSS as TB suspect
Suspect TB disease, continued

- Contact patient
  - History of illness, comorbidities, presence of symptoms, ability to provide sputums, other persons present in household, insurance status
- Determine whether isolation is needed
  - Place into isolation if needed; educate patient and family about what this means, potential enforcement if not followed. Some LHD have a written isolation agreement for patients to sign.
Suspect TB disease, continued

- Obtain sputums if possible and send to WI State Laboratory of Hygiene by courier
- Await PCR and/or GenXpert result on sputums
- Report results (positive or negative) to patient and family, clinician
- If not TB disease, does patient have LTBI?
- If TB disease …
TB Issues in WI… Activities by Local PHN

- TB prevention
- TB screening and testing
- TB infection (latent TB infection or LTBI)
- Suspect TB disease
- TB disease
TB disease—Local Public Health Activities

• Receive test results or clinician call regarding new case of disease.

• Obtain as much information from provider as possible.
  • history of illness, determine infectious period, ? source of infection, risk factors, baseline medical history (HIV, diabetes, renal disease, hepatitis, alcohol usage, other meds including OTC).
TB disease, continued

• Consult with State re need for additional tests, labs to CDC.

• Sputums X 3 for AFB to WSLH if not already done.

• Enter new case into WEDSS, including history from clinician, lab results, CXR and CT reports.
TB disease, continued

• Initial home or hospital visit with patient, nurse wearing N95 mask.
  • **Education**: TB disease, isolation needs/minimizing transmission, need for sputums, general info. on treatment esp. DOT.
  • Provide written information about TB and medications as appropriate.
  • **Identify barriers** to treatment (financial, housing, employment, denial).
TB disease, continued

- **Directly Observed Therapy (DOT)** is the standard of care.
  - Usually four drug treatment, but may vary if patient is known or thought to be drug resistant.

- Arrange **vision testing** and, if needed due to medications chosen, **hearing testing** during first weeks of treatment.

- Monitor frequently for side effects, response to treatment, and dose count.
TB disease, continued

• Coordinate appointments for labs or exams.
• Ensure isolation as ordered.
• Use interpreters as needed.
• Obtain medications from State TB Program or from local pharmacy (depending on your contract).
• Maintain confidentiality.
TB disease, continued

- Maintain ongoing communication with clinician. Obtain CXR and lab results as needed and put into WEDSS.
- Develop a caring and trusting relationship with the patient and family.
- Coordinate referrals for other illnesses and issues as needed.
TB disease, continued

• Use incentives and enablers through American Lung Association program.

• Document everything!

• If patient requires placement in a facility, assist facility in using appropriate protective equipment and educate staff as needed.

• If patient needs home care, work with agency to assure safety of agency staff.
TB disease, continued

• Obtain weekly or monthly sputums, depending on patient status and length of time on meds
• Have ongoing consultation with State TB Nurse consultant. At least monthly check-in. They will consult with Mayo as needed.
• Maintain DOT throughout treatment course. Use eDOT if necessary once patient is through intensive phase and is no longer in isolation.
TB disease, continued

• If patient moves, complete *interjurisdictional form* and notify agency which will receive patient.

• At end of therapy, summarize side effects and treatment course, and close patient in WEDSS.
TB disease, continued (Contact Investigation)

- Identify high-risk contacts and arrange for initial testing as soon as possible to obtain a “baseline.”
- Repeat testing at 8-10 weeks after last exposure to index case for those persons who were “negative” at initial screening.
TB disease, continued
Contact Investigation

• The probability that *M. tuberculosis* will be transmitted depends on…
  • Susceptibility (immune status) of the exposed individual.
  • Infectiousness of the person with TB.
  • Proximity, frequency, and duration of exposure to index case.
  • Environmental factors that affect the concentration of *M. tuberculosis* organisms.
Statistics

• Wisconsin data


• Minnesota data 2016


Minnesota data 2012-2016

Case Management

• Assures that:
  • Patient assessed, interviewed; treatment plan developed
  • Therapy appropriate and continuous (DOT)
  • Response to treatment monitored
  • Patient educated about disease and treatment
  • Isolation maintained as appropriate
  • Contacts identified, evaluated & treated
  • Referral to other services as needed
  • Continuity of care
Think TB!

Recognize possible signs and symptoms of Tuberculosis. Early diagnosis and treatment reduces spread. Contact your Health Department or physician for more information.

- Positive Skin Test
- Coughing up blood
- Weight Loss
- Weakness
- Loss of Appetite
- Chest Pains
- Exposure to Tuberculosis
- Fatigue
- Malaise
- Chills
- Fever
- Night Sweats
- Hemoptysis
- Difficulty breathing
- Shortness of breath
- Anorexia
- Significant Skin Test
- Abnormal X-ray
- HIV
- Diabetes Mellitus

CDC
U.S. Department of Health and Human Services
Public Health Service
Thank You!

Questions?
Questions:

- The probability that *M. tuberculosis* will be transmitted depends on...
  - A. Susceptibility (immune status) of the exposed individual.
  - B. Infectiousness of the person with TB.
  - C. Proximity, frequency, and duration of exposure.
  - D. Environmental factors that affect the concentration of *M. tuberculosis* organisms.
  - E. A, B, C, and D are correct.
Questions:

• Which statement about the purpose of LTBI treatment is true?
  • It is given to people who have LTBI to prevent them from testing positive on a subsequent TST.
  • It is given to people who have LTBI to prevent the progression to TB disease.
  • It is given to people who have TB disease to prevent the disease from getting worse.
  • It is given to people who have TB disease to prevent them from becoming infectious.
Questions:

- When should close contacts who have a negative IGRA or TST result be retested?
  - A. 4-6 weeks after they were last exposed to infectious TB disease.
  - B. 8-10 weeks after they were last exposed to infectious TB disease.
  - C. It is **not** necessary to retest them.
Questions:

• The major goals for treatment of TB disease include which of the following?
  • A. Curing the individual patient.
  • B. Minimizing risk of death & disability.
  • C. Reducing transmission of *M. tuberculosis* to other persons.
  • D. A, B, and C are all correct.
  • E. Only A and B are correct.