



RAMSEY COUNTY

Ramsey County Board Workshop: Tuberculosis Update

October 8, 2019

Estimated Start time: 9:45 a.m.

220 Courthouse, Large Conference Room

Agenda

1. Introduction Paul Allwood, Deputy County Manager Health and Wellness Service Team

2. Presentation Public Health Staff:
 - a. Lynne Ogawa, Medical Director
 - b. Laura Andersen, Health Protection Manager
 - c. Adrienne Thayer, PHN, Clinical Services
 - d. Tracina Cropper, Public Health Advisor, CDC
 - e. Gina Pistulka, Clinical Services Manager

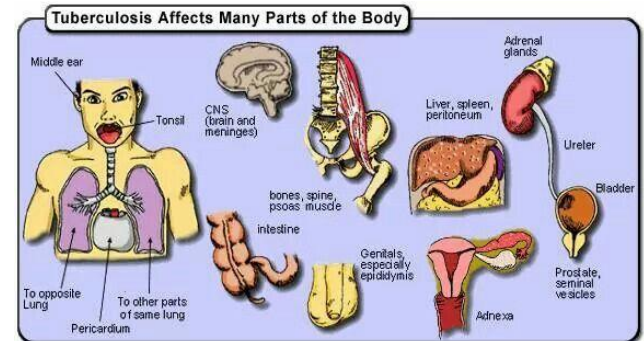
Tuberculosis Update
Ramsey County Board Workshop
October 8, 2019

Objectives

- Discuss tuberculosis (TB) and its impact on communities in Minnesota and Ramsey County.
 - Understand the complexity of the patient population, as well as the extensive treatment, management and monitoring of TB care.
 - Identify advances that have been made to screen, care for and monitor patients with TB within community and institutional settings.
 - Discuss opportunities and challenges around TB prevention and control.
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Overview: what is tuberculosis (TB)?

- Tuberculosis, or TB, is an airborne disease caused by a germ called *Mycobacterium tuberculosis*.
- The disease can spread to any part of the body, but most commonly affects the lungs.
- TB is a serious disease. If left untreated, can be potentially dangerous and even result in death.



Latent infection versus active disease: why does it matter?

Latent Tuberculosis Infection (“LTBI”)

Active Tuberculosis

Bacteria are present

Do not feel sick

Do not have symptoms

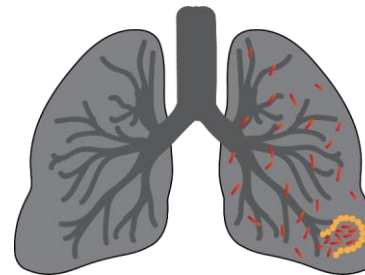
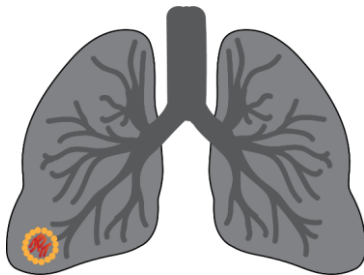
Can not spread TB to others

Bacteria are present

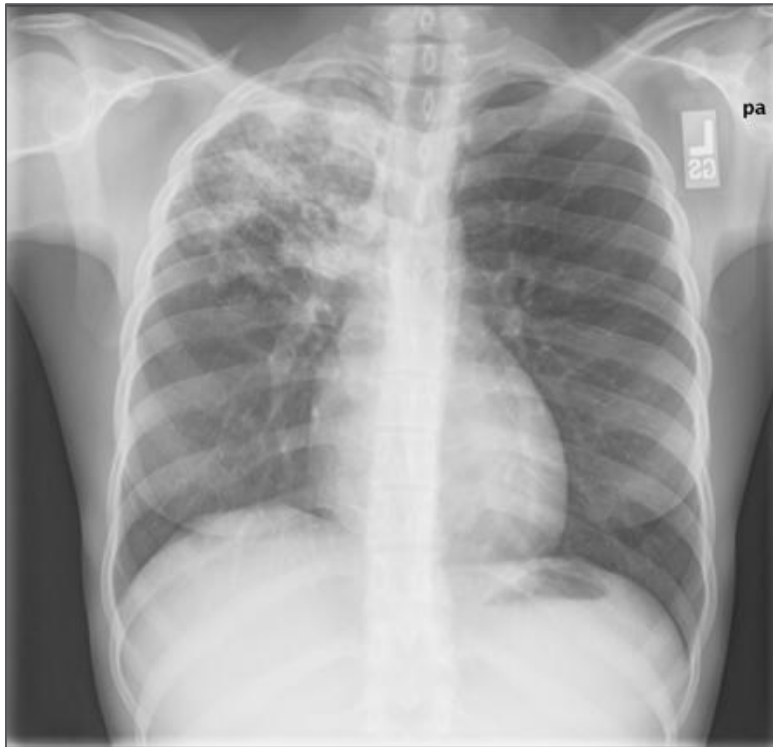
Sick from active disease

Usually have symptoms

May spread TB to others



Diagnosing active pulmonary TB can be a lengthy process



- Symptoms: cough, weight loss, night sweats, fatigue, shortness of breath, chest pain – can be subtle
- Chest x-ray/CAT scan
- Sputum samples that show acid-fast bacilli
- Polymerase chain reaction (PCR) testing to confirm the type of bacteria
- Culture can take up to 8 weeks to grow

Treatment of TB

- Latent TB (LTBI)
 - 4 months of rifampin, 9 months of isoniazid, or 3 months of rifapentine with isoniazid
- Active TB
 - Pansensitive TB
 - Typically start with 4 drugs – “RIPE” – rifampin, isoniazid, pyrazinamide, and ethambutol
 - On average, treatment takes a total of 6-9 months
 - Multidrug resistant (MDR) TB
 - Starts with 6 drugs
 - On average, treatment takes a total of 18-24 months

Clinical Significance of Resistance

- If pan-sensitive, patients have a greater than 95% chance of cure
- If resistant to INH, patients have a greater than 90% chance of cure
- If resistant to rifampin, patients have a greater than 70% chance of cure
- If resistant to INH and rifampin (or MDR), patients have about ~50% chance of cure

Tuberculosis worldwide

An estimated 2-3 billion people are infected with the bacillus *Mycobacterium tuberculosis*, only 5-15% will develop the disease

In 2015

10.4 million cases

1.8 million deaths

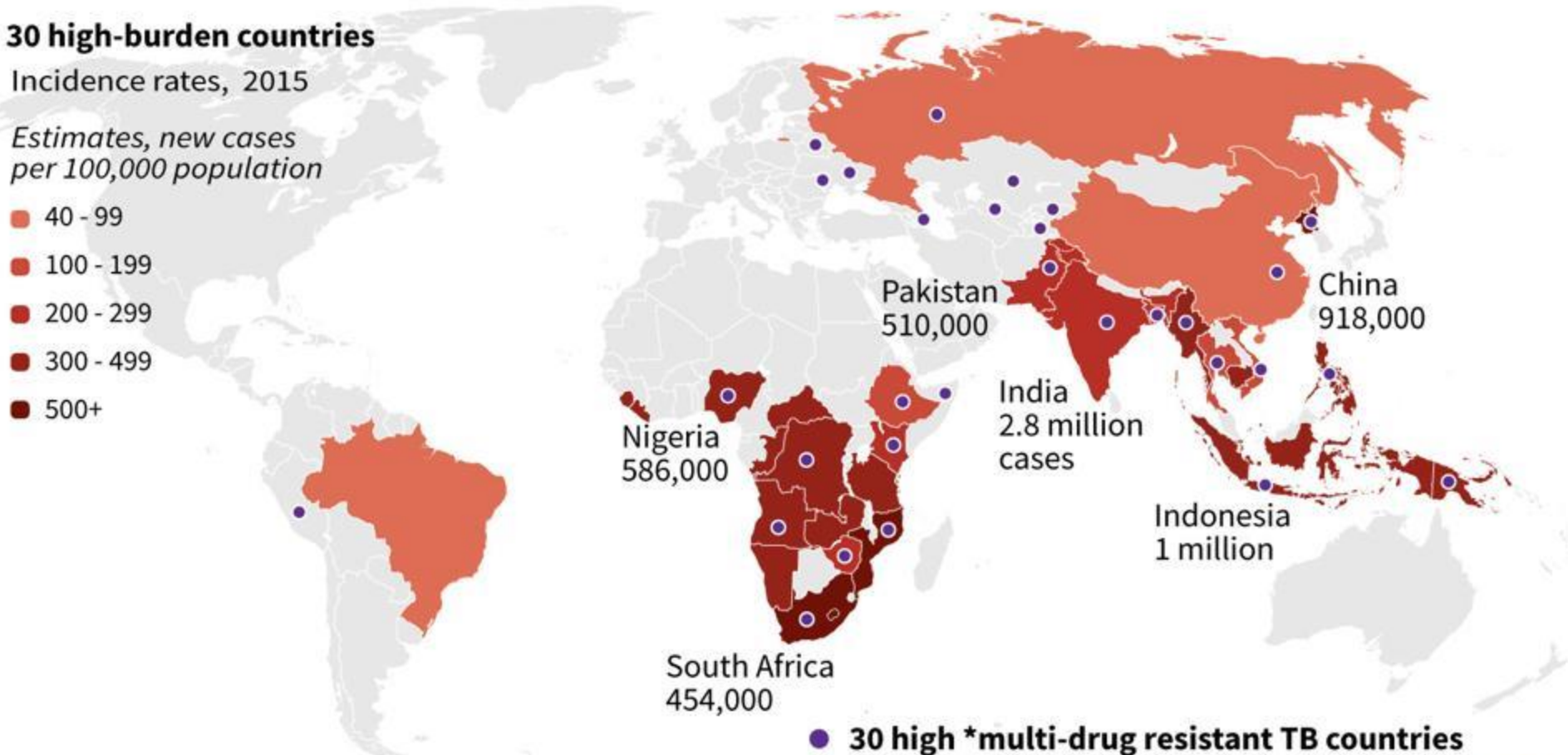
480,000 *MDR-TB cases

30 high-burden countries

Incidence rates, 2015

Estimates, new cases per 100,000 population

- 40 - 99
- 100 - 199
- 200 - 299
- 300 - 499
- 500+

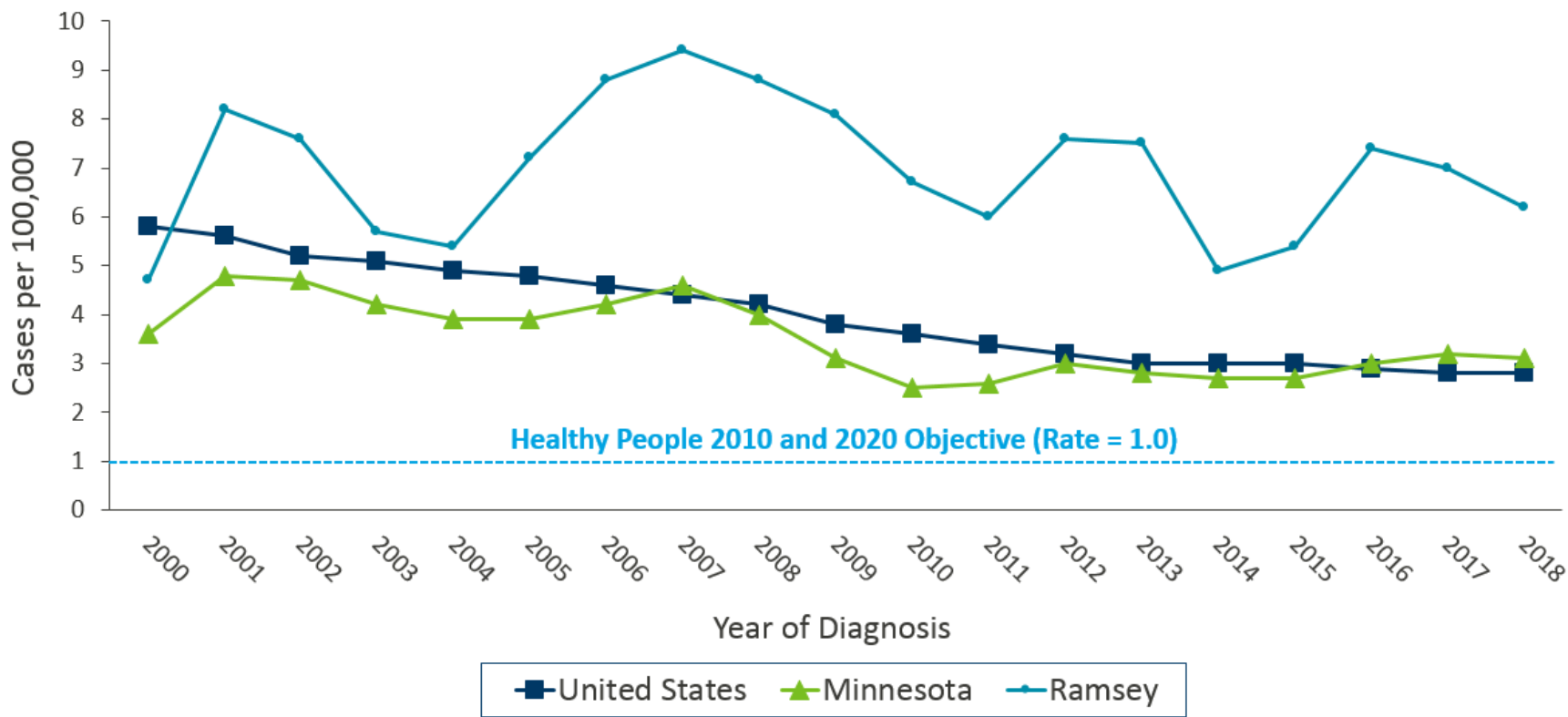


Source : WHO global tuberculosis report 2016

Minnesota case rates: still above national average

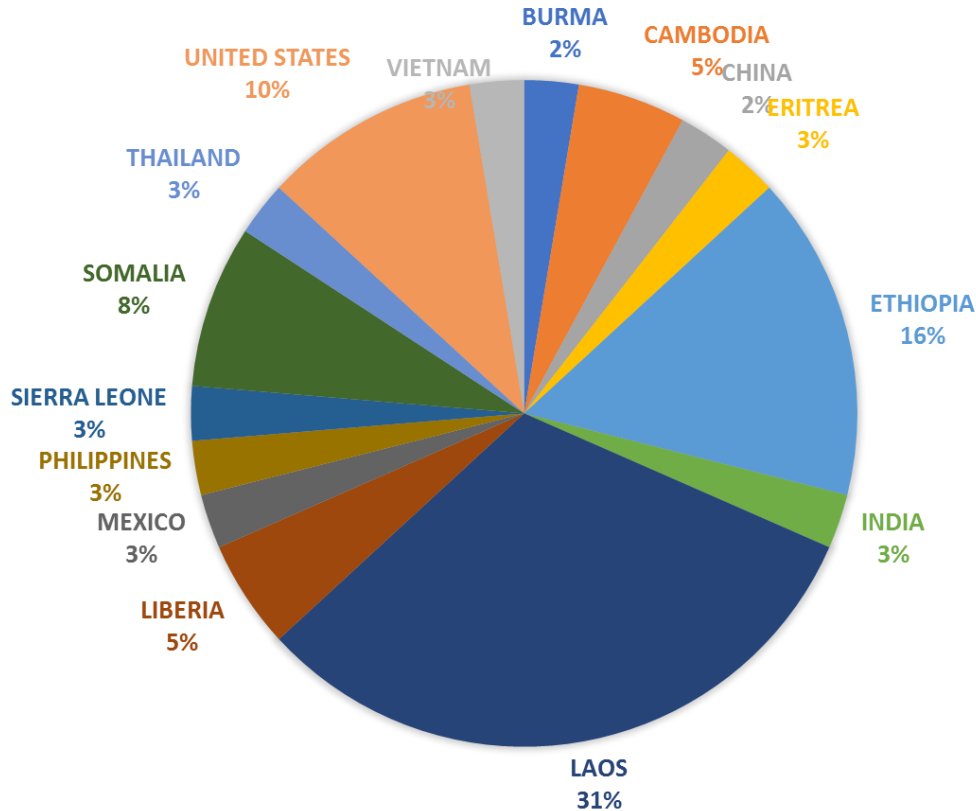


TB Incidence Rates per 100,000 Population, United States and Minnesota, 2000-2018



Current state

CASES BY COUNTY OF ORIGIN, 2017



- Total number of cases counted in 2017 and 2018 were 38 and 34, respectively.
- The majority of all cases were born overseas.

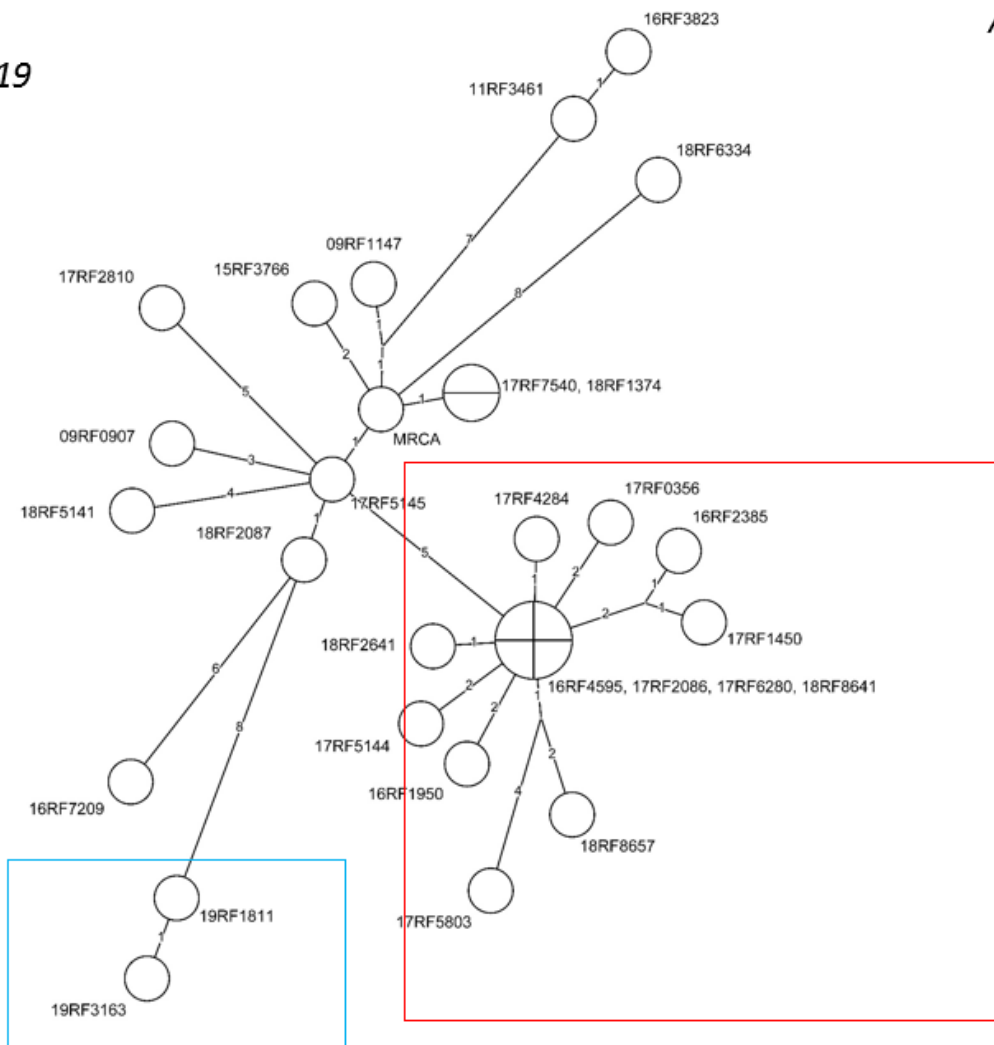
Multidrug resistant case update

	2016	2017	2018	2019	Total from 2016 to date
Total MDR TB cases	9	9	9	4	31
Total Hmong MDR TB cases	6	8	7	3	24
Hennepin County	0	0	1	1	2
Ramsey County	5	8	6	2	21
Washington County	1	0	0	0	1
Link to Ramsey senior center	3	6	2	0	11
Died – all causes	3	3	1	0	7
Died from TB	1	2	0	0	3
<i>Outbreak cases = related cluster of Hmong MDR TB (based on WGS, epidemiology, and clinical information)**</i>	4	6**	3	0	13**
Ramsey County	4	6	3	0	13
Link to senior center	3	5	2	0	10
Died – all causes	2	2	1	0	5
Died from TB	0	1	0	0	1

Role of Genotyping in Characterizing MDR Cluster in MN

G01449 in Minnesota
Results received 5/21/2019

Analysis updated with 19RF3163



Outbreak cases

Contact investigation



- Meeting with and talking to the patient about who might have been exposed
- Find and treat additional persons with TB disease or LTBI
- On average, 10 contacts are identified for each patient

Case management



- An assigned public health nurse to manage the patient
- Systematic, regular review of each patient's treatment progress – side effects, symptom improvement
- Helps address barriers to adherence
- Educating the patient and family about TB treatment

Our patients...

Often experience:

- Diagnosis denial
- Insecure employment
- Unstable housing/homelessness
- Mental health concerns
- Chemical dependency
- Developmental disabilities
- Lack of familial support
- Frequent incarceration
- Comorbidities (diabetes, HIV)

Barriers to treatment

- Lack of understanding around TB
- Language
- Competing patient priorities
- Transportation
- Health insurance
- Access to medication
- Language
- Scheduling
- Coordination of care

Directly observed therapy, or “DOT”



- The most effective strategy to ensure adherence to treatment
- Patient meets with a health care worker every day
- The patient takes the medication while the worker watches
- The health care worker asks about any problems or side effects from the medication
- Video DOT is an option for some patients

Supports for Our Patients

- Incentives and Enablers
- Transportation
- In-person interpreters
- Subject matter experts available
- Skilled providers
- Program support (e.g. training, coordination)
- Working toward interconnectivity with other county services and interagency collaboration

Human and Financial Resources

- Outbreak-related spending (FTEs, contracts, supplies, equipment)
 - 2017 - \$396,188
 - 2018 - \$518,450
 - 2019 - \$ 418,490.10 to date

Current Efforts and Challenges

- Environmental upgrades to facilities – balls in the walls, new x-ray equipment
- Working on 340B pharmacy pricing and process
- Remodeling as an interim strategy, with ongoing space constraints
- Electronic health record implementation in 2020, related TB workflow
- Ensuring proper directly observed therapy
- Maintaining existing progress while moving forward to address identified gaps in program performance.

TB in Corrections

- MN statute requires us to provide testing by day 14 of incarceration.
- Our goal is to assure that a TB test (IGRA or TST) is conducted at booking across all correctional sites
- At this time, we provide a thorough symptom screen, conducted by a nurse.
- For patients who test positive, we offer LTBI treatment. If treatment is incomplete prior to release, a referral is made to the TB Clinic (555 Cedar).

Questions?