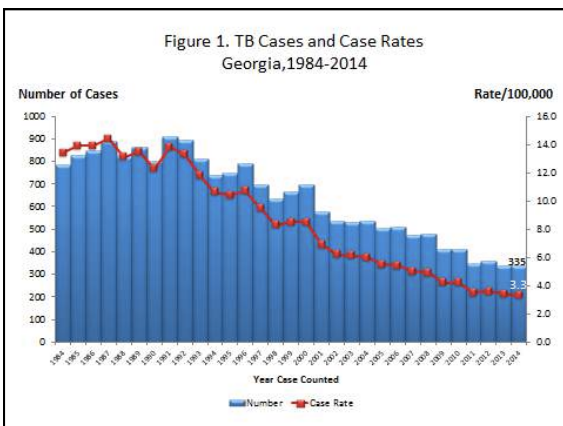


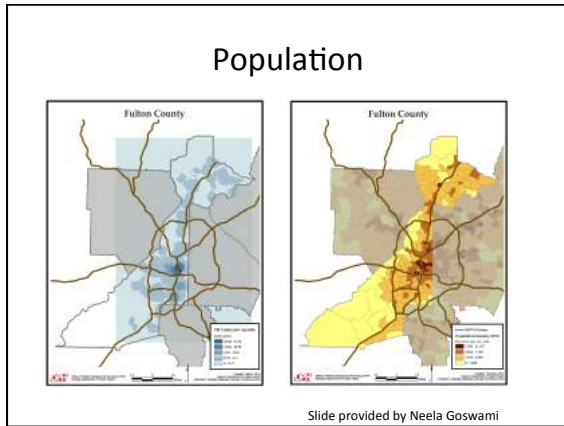
Atlanta Homeless TB Outbreak

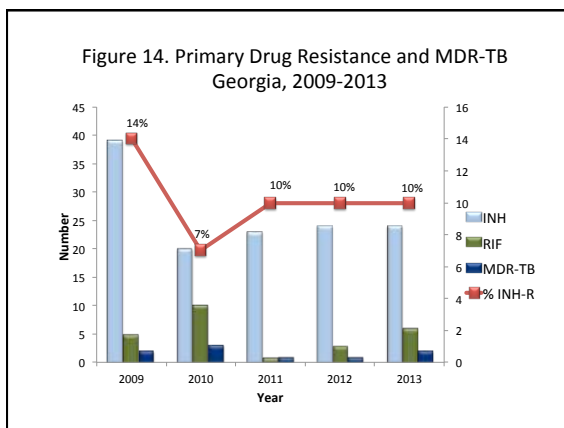
Susan M. Ray, MD
Prof. of Medicine (ID), Emory Univ SOM
Hospital Epidemiologist, Grady Health System
Medical Consultant, GA State TB Program

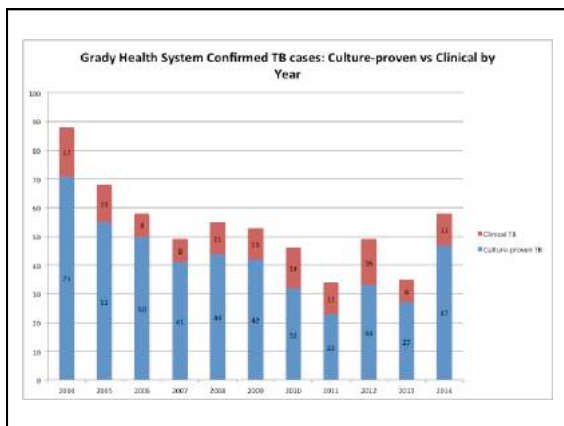
Outline

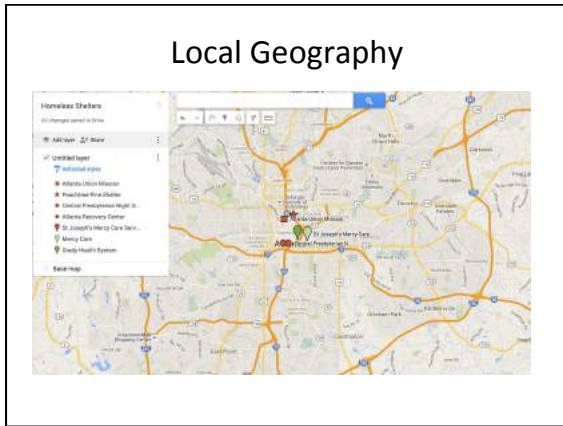
- Outbreak timeline with summary of clinical and demographic data
- **Causes of the outbreak**
- Interventions
- Continuing challenges

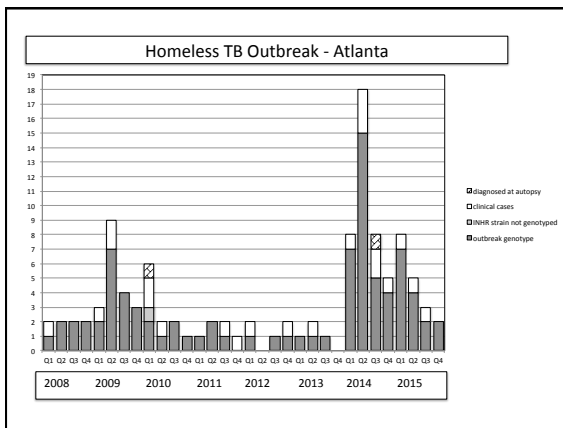












Outbreak Case Definition

- Culture positive with outbreak genotype
- Clinical TB in a person living in the shelters during the outbreak period

- Outbreak Genotype
 - PCR00231
 - INHR low level (inhA mutation)

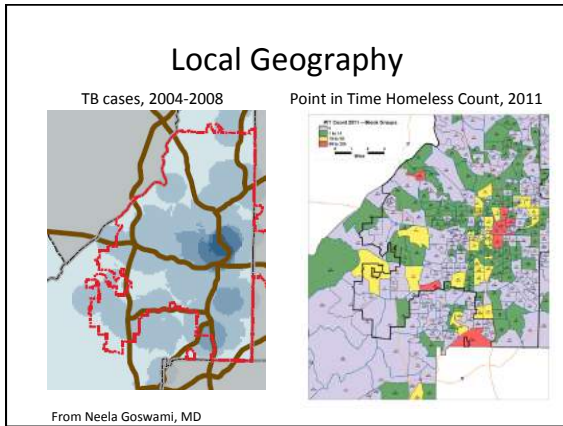
Demographic and Social Characteristics (107 persons, 110 episodes of disease)

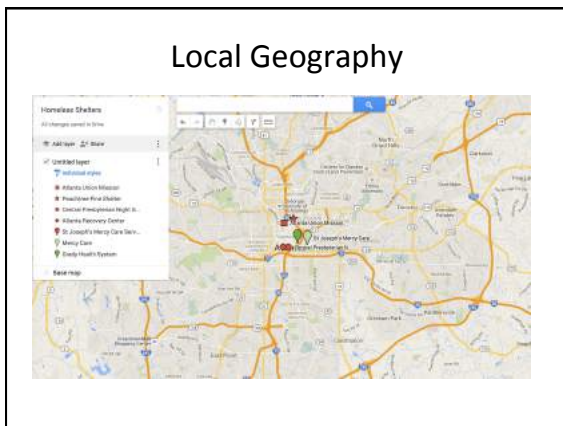
<p>Gender/Race/Ethnicity</p> <ul style="list-style-type: none"> 98% male at birth 88% black 96% U.S. born <p>Age groups</p> <ul style="list-style-type: none"> 15-24 yrs 3% 25-44 yrs 30% 45-64 yrs 65% 65+ 2% <p>Substance Use</p> <ul style="list-style-type: none"> ETOH 29% Non-injecting drug use (crack) 34% Injecting drug use 2% Any use 46% 	<p>Mental Illness: 35%</p> <p>Incarceration</p> <ul style="list-style-type: none"> In the year prior to diagnosis: 28% Ever: 34% At the time of diagnosis: 6% <p>Homelessness</p> <ul style="list-style-type: none"> Current or former shelter resident 93% Shelter volunteer 3% Long term homelessness (among homeless) 91%
--	---

Local Geography

Clinical Characteristics (107 persons, 110 episodes of disease)

<p>86 (78%) culture positive</p> <ul style="list-style-type: none"> 100% INHR (low level) 84 pulmonary TB <ul style="list-style-type: none"> pulmonary/pleural only 72 extra pulmonary also 12 <ul style="list-style-type: none"> CNS 4 Disseminated 1 Lymphatic 6 2 meningitis only <p>24 clinical cases</p> <ul style="list-style-type: none"> 18 pulmonary 4 pleural 2 meningitis 	<p>Pulmonary TB cases (n=102)</p> <ul style="list-style-type: none"> 81% culture positive 55% smear positive 28% cavitary <p>12 deaths (11%)</p> <ul style="list-style-type: none"> 9 deaths after treatment started 3 deaths before diagnosis known <p>40 (37%) HIV positive</p> <ul style="list-style-type: none"> median CD4 110 cells/ul
---	--





Public Safety Notice: Emory Midtown Community
 Saldern, Nancy (sent by All Registered Street E-mail Addresses)
 Sent: Tuesday, February 23, 2016 at 5:53 PM
 To: All-Emory@CDCPHN.EDU

Public Safety Notice

Emory has received a report of an assault and potential robbery that occurred at approximately 5:00 PM on February 23, 2016, on Pine Street between Peachtree and Courtland Streets.

What follows is a description of the reported incident: A male and female who are unaffiliated with Emory reported to Atlanta Police that a group of individuals followed them as they were walking on Pine Street from Courtland Street toward Peachtree Street. A male in the group, who was riding a small girls bicycle, grabbed the female victim's purse. An unknown number of others from the group struck the male victim with their fists and an umbrella and took his backpack. Neither victim reported being injured. No additional information was provided.

Anyone with information regarding this incident is encouraged to contact the Atlanta Police Department at 404-577-8477.

Risk Reduction Tips:


- Stay alert, trust your instincts, and be aware of your surroundings.
- If something or someone makes you uneasy, move toward a place where there are other people.
- Walk in a group, or at least with one other person, whenever possible.
- Use well-lit and well-traveled areas.
- Use the safety escort services.
- Do not leave valuables (cell phones, laptops, etc.) unattended or exposed to public view.
- Program emergency numbers in your cell phone.
- Report suspicious behavior to the police immediately.

Call the appropriate number below if you ever feel that your safety or that of others is compromised, to report information about a crime under investigation, or to access resources available for survivors of sexual


HIV positive persons (n=40)

- 99% male at birth
- Age
 - 15-24 yrs: 3 (8%)
 - 24-44 yrs: 17 (43%)
 - 45-64 yrs: 20 (50%)
- 99% U.S. born
- Cd4 count
 - 50 or less: 15 (38%)
 - 51-199: 13 (32%)
 - 200-499: 9 (22%)
 - 500+: 3 (7%)
 - Unknown: 1 (2%)
- HIV previously known: 37 (93%)
 - Not receiving ART: 28 (78%)
 - Years since HIV diagnosis
 - 1 year: 6 (16%)
 - 2 to 5 years: 8 (22%)
 - 5 to 10 years: 13 (35%)
 - Over 10 years: 8 (22%)
 - Unknown: 3 (8%)
- Outcome after TB rx (n=36)
 - Completed therapy 33 (89%)
 - Lost: 1
 - Still on therapy: 1
 - Death: 5 (14%)
- In HIV care after completing TB Rx

TB cases overlap HIV with delayed entry into care



TB Cases: 2004-2008



HIV Cases from 2012 with >3 months to Care

HRSA clinics, 2014

Atlanta HRSA clinic with highest number of HIV patients not linked to care

2014 data	Boston HealthCare for the Homeless	St. Joseph's Mercy Care, Atlanta	IM Subsicher Homeless Center, Jacksonville	Los Angeles Christie n Health Center	HWCA Institute, Inc. Los Angeles, California	San Francisco Community Health Center Cooperation	Seattle/King County Public Health Department	Public Health Managemen t Corporation, Philadelphia	Care for the Homeless, New York, NY	HELP Project Sancti-San Corporation St. Louis	Dallas County Hospital District, Dallas, TX
Total Patients	14,769	11,965	5,446	9,350	27,162	22,209	18,804	16,974	8,579	8,745	8,599
Homeless	100%	66%	87%	68%	30.10%	100%	100%	55%	100%	74%	100%
HIV	3%	9%	0.3%	1%	1.10%	4%	0.3%	4%	2%	27%	1%
HIV Linkage to Care	100%	26%	-	75%	65.50%	100%	100%	84%	78%	90%	100%
total HIV patients	443	1077	16	94	299	888	56	679	172	2361	86
HIV patients not linked to care	0	797	≤16	24	103	0	0	109	38	236	0


<http://bphc.hrsa.gov/uds/datacenter.aspx?q=d>

Smear positive Case Example 1

61 yo man
 No medical problems
 Day laborer
 Tobacco use; Lived at shelter x 5 years

Diagnosed in February 2014
 Symptom onset June 2013

AFB smear 4+




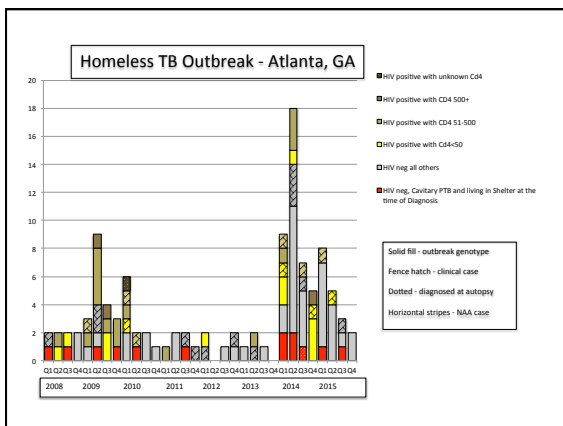
Smear positive case example 2

50 yo man
 Prior TBI but no medical problems
 Diagnosed February 2014

Living in shelters since Nov 2013
 Symptoms since May 2013
 ETOH, Cocaine, Tobacco

AFB smears 4+





March – May, 2014 - Outbreak Response

- Shelter directors notified of TB outbreak
- Downtown Atlanta hospital EDs and Emergency Preparedness Regional Coordinating Hospitals alerted
- Mass TB screenings at Shelter A and B conducted by County
- CDC Epi-Aid investigation
- Initial TB informational sessions at shelters/soup kitchens
- Assessment of resources available to respond
- No formal homeless meeting structure exist for collaboration
- Mercy Care (FQHC-HCH) asked to launch TB Task Force

Slide content Provided by Tom Andrews


Initial Composition of Task Force

- All shelters involved in outbreak
- All other homeless shelters and transitional housing providers
- Other homeless service providers
- State Department of Public Health
- Fulton County Board of Health
- Atlanta Homeless Continuum of Care & DCA
- DeKalb County Board of Health
- Regional Commission on Homelessness
- Emory Healthcare/Emory School of Medicine

Slide content Provided by Tom Andrews

TB Task Force

- Meets monthly at Mercy Care
- Regular updates on outbreak provided by County with time for questions and discussion
- Regular updates by state and Emory on educational activities
- Facilitated the development and provided input on the *Guidelines to Prevent TB in Homeless Housing Facilities*
- Facilitated the development and provided input on the TB educational materials and assisted with the dissemination to key stakeholders
- Informed and assisted with changes to Pathways Homeless Management Information System including: a flag for contacts needing evaluation, TB screening verification & symptom screening information
- Provided input for a modified TB card and clearance letter needed for shelter admission.
- Provided input on administrative controls and MOU



Slide content Provided by Tom Andrews

**Memorandum of Understanding
between Shelter Facility and County**

- Purpose:
 - Ensure implementation of recommended administrative controls to prevent spread of TB
 - Sharing of TB-related information between both parties
- Shelters will:
 - Fully implement the administrative controls
 - Maintain a record of the basic information on all residents
 - Require all residents to have govt-issued identification
 - Assist (as able) in encouraging clients to be treated for latent TB
- FCDHW will:
 - Provide technical assistance to implement administrative controls and TB education
 - Inform the shelter if a TB case is associated with the facility
 - Provide a list of contacts who need TB testing
 - Provide free TB tests and free medications for all clients with latent TB
 - Ensure clients with active TB are referred to alternate housing to complete treatment

Slide Content from Heta Patel

Administrative Controls

- TB clearance (yellow or blue card) from Fulton County TB clinic or Mercy Care clinic within 7 days of admission to shelter; renew every 6 months
- TB symptom screen at entrance
- Cough logs
- Appoint health liaison to refer TB suspects
- Cover your Cough posters/provide masks/tissues for clients to cover cough

Slide content Provided by Tom Andrews

MOU Compliance Inspections

- FCDHW schedules compliance inspections and uses a standardized compliance inspection form to assess the implementation of recommended administrative controls from the “Guidelines for Preventing and Controlling Tuberculosis in Atlanta Homeless Housing Facilities”
- Goal is for all homeless shelters to have and maintain a rating of 14/14 (100%).

Slide Content from Heta Patel

Task Force Barriers

- Initial Trust & Sense of Collaboration
- Impact on Volunteers in shelters
- Media coverage
- Complexity of outbreak and clinical understanding of the disease
- Lack of automation/centralized data collection mechanisms

Slide content Provided by Tom Andrews

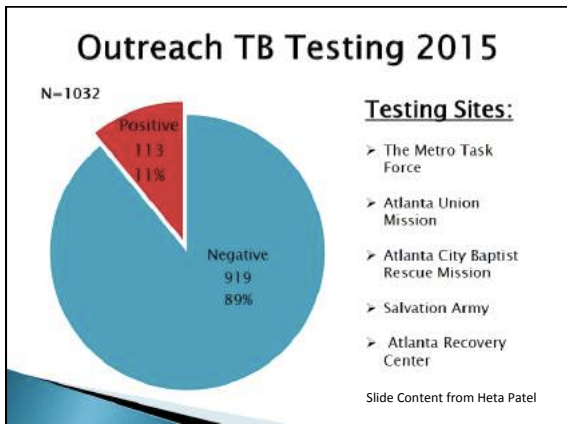
Task Force Impact

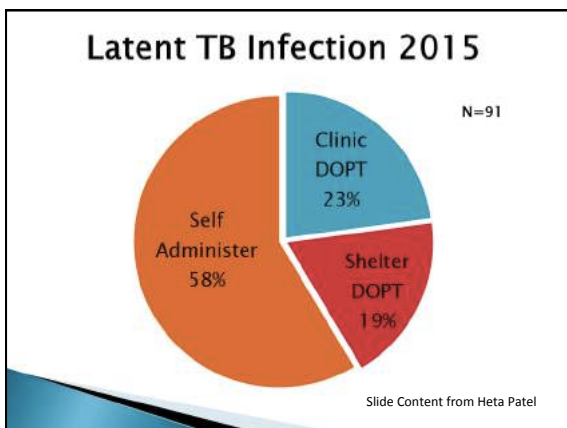
- Strong collaboration between the Task Force, county, state, CDC, Atlanta Continuum of Care and community stakeholders is essential to control this outbreak.
- Monitoring and ensuring compliance with recommended administrative TB controls in homeless shelters is crucial to stop further TB transmission.
- Implementation of Outreach Testing Program

Slide content Provided by Tom Andrews

Contact tracing, testing, and treatment: Challenges

- Contact tracing:
 - Limited bed logs
 - One of the main shelters open only seasonally
- Contact Testing:
 - Poor sensitivity (HIV) and specificity (many previously infected) of testing for TB infection
 - Those willing to be tested are usually not at highest risk
 - TB screening for residents was not mandated by shelters prior to 2015
- Treatment:
 - Federal partners could not endorse use of INH/RPT
 - 4R recommended: daily by DOT when possible
 - Many who completed treatment in 2014 have been re-exposed since completing therapy





Looking forward

- Revisit use of 3HP
 - Convene an expert panel
- Employ DOT ART for HIV + persons in the shelters who are not yet in care

Thank you

- **Fulton County Health Department**
 - David Holland (also Emory Division of ID)
 - Aliya Yamin
 - Omar Mohammed
 - Heta Patel
- **GA State TB Program**
 - Rose Marie Sales
 - Kortney Floyd
 - Lauren Dimiceli
- **Grady Health System**
 - Stephanie Cagle
- **Mercy Care of Atlanta**
 - Tom Andrews
- **Emory Division of Infectious Diseases**
 - Neela Goswami
 - Carlos Del Rio
- **CDC**
 - Sapna Bamrah
 - Krista Powell
 - Dan Vanderende
- **Atlanta TB Task Force**

Extra slides

What you Need to Know about Tuberculosis (TB)

Signs and symptoms of TB

How could I get exposed to TB?

How can I protect myself from getting TB?

Am I at risk for getting infected with TB?

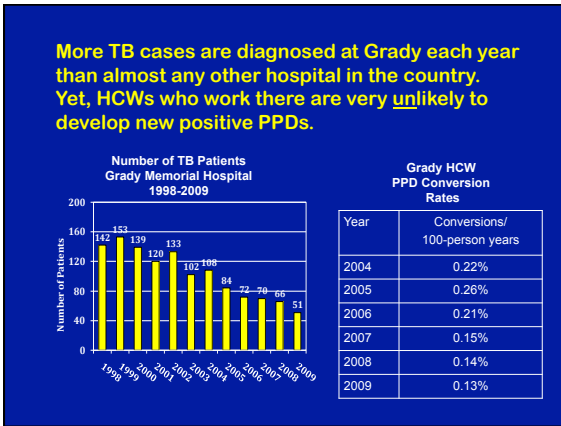
Am I at risk for developing TB disease?

What does a positive skin test mean?

TB Clinics and Contacts

Copyright © 2014. All rights reserved. Tuberculosis is a contagious disease that can be spread from one person to another. It is caused by a bacterium called Mycobacterium tuberculosis. TB is most often spread through the air when a person with TB disease coughs, sneezes, or speaks. TB can also be spread through contact with someone who has TB disease.

© 2014 Centers for Disease Control and Prevention. All rights reserved. TB is a contagious disease that can be spread from one person to another. It is caused by a bacterium called Mycobacterium tuberculosis. TB is most often spread through the air when a person with TB disease coughs, sneezes, or speaks. TB can also be spread through contact with someone who has TB disease.



The sole reason for this remarkable (and very good) disparity.....an effective administrative control

Grady Expanded TB Isolation Policy

CRITERIA FOR ISOLATION	LENGTH OF ISOLATION
1. Active Pulmonary TB	Duration of hospitalization unless >4 weeks and then must have 2 negative AFB smears
2. R/O TB or sputum AFBs ordered (expanded surveillance)	Until 2 sputum AFB smears are negative
3. HIV+ patient admitted with abnormal CXR	Until 2 sputum AFB smears negative

- NOTE: D/C isolation if patient has 2 negative AFB smears and active TB is no longer suspected.

