Tuberculosis & Homelessness: An Introduction to the Problem from the National Perspective

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Tuberculosis (TB) & homelessness

• 1% of the U.S. population in a given year

• Well-established association between TB and the homeless

Photo taken with written consent by Isabelle Sanchez
TB Cases Reported as Homeless in the 12 Months Prior to Diagnosis, Age ≥15, United States, 1993-2014*

*Updated as of June 5, 2015.
Note: Homeless within past 12 months of TB diagnosis.
Although TB has been declining in the United States, the proportion of cases reported as homeless has remained stable around 6%.
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Six percent might seem underwhelming, so why are we so concerned?

1) TB rates among persons experiencing homelessness are 10 times higher compared to persons with stable housing.

2) Outbreaks involving homeless persons continue to challenge TB control efforts.
CDC’s outbreak investigation experience since 2012

- Outbreaks involving homeless persons were larger (i.e., more cases and more contacts per outbreak)
  - 4 outbreaks involving homeless persons
    - >45 cases/outbreak
    - ~5,000 contacts/outbreak
  - 17 outbreaks not involving homeless persons
    - <10 cases/outbreak
    - ~350 contacts/outbreak
What more can we do?

- Infection-control measures in overnight homeless facilities provide opportunities to prevent & interrupt transmission of TB among persons experiencing homelessness
  - Unfortunately, uptake by facilities has been variable

- In September 2015, CDC’s Division of TB Elimination convened stakeholders from various backgrounds and disciplines to discuss barriers to implementation of infection-control measures in overnight homeless facilities
~100 external participants

- 48 representatives from TB programs
  - 14 states and the District of Columbia

- 33 representatives from overnight homeless facilities or other services-providers

- 15 representatives from federal agencies or national organizations
Topics discussed

- Partnerships
- Administrative- & respiratory-control measures
- Homeless Management Information System (HMIS)
- Education
- Environmental-control measures
- Housing as a health-care intervention
- Ways CDC and other federal agencies can assist
Highlights from discussions

- Workshop provided unique opportunity to bring together multiple perspectives & diverse expertise in fields of TB & homelessness
  - Participants expressed desire for more opportunities

- Public-health participants were eager to learn more about HUD’s Continuum of Care (CoC) programs
  - For some public-health participants, this workshop was their first introduction to the CoC model
  - Both public health & homelessness experts expressed need for more cross-collaboration

- Partners requested more updated guidance on TB & homelessness
Next steps

- Summarize the proceedings for the workshop
  - Work with national & federal partners to disseminate widely the workshop proceedings

- Continue to work with partners to foster relationships and facilitate cross-collaborations
Mayo Clinic Center for Tuberculosis

A Homeless Man with Many Chest X-rays

Dana G. Kissner, M.D.
Medical Director WSUPG TB Control & Prevention (Elimination)
TB Webinar February 17, 2016
Objectives

• Show, via a single case history,
  • How homelessness amplifies the impact of TB on a community & health department
  • How TB in the homeless can be a harbinger of reductions in public health resources
    • “U Shaped Curve of Concern”
• What prevents us from moving to TB elimination
Background

- 56 year old African American man
  - Mental illness
  - Heroin, all forms, including skin popping, since age 17
  - Cocaine
    - Multiple admissions for skin abscesses
  - Cigarettes since age 17
  - HIV negative
  - Hepatitis C + (HCV RNA by PCR >4 million IU/ml.)
  - Chronic hepatitis B
  - In and out of Wayne County Jail
  - Involved in numerous assaults
1st + PPD
In Jail

May, 2011

1st definitely abnormal CXR

June 2011

Last mention of PPD

June, 2011

Oct, Nov 2011

Jan 2012

Jail

Homeless

TB Diagnosis
Dec 2012
1. New + PPD Skin Test: Missed Opportunity

- 5/26/11 Brought to ED from jail for new + PPD skin test
- PPD done on admission to jail
- Instructed to follow up with the health department
2. June 5, 2011

- Admitted for septic right knee (MRSA) with bacteremia
- Positive PPD mentioned, but never noted again
- Still in custody of jail
June 17, 2011

- Fever
- Same admission
- No mention of this chest x-ray on progress notes

Probable pleural effusion from fluid overload.
3. October 3, 2011

- New admission
- Osteomyelitis knee
- Bacteremia MRSA
- Remains in jail

- Another admission
- Fever, bleed from knee
- Intubated for blood loss during surgery
- No mention of chest x-ray findings
- Above knee amputation December 2.
- Left hospital AMA December 5, homeless
NSO is the only 24-hour/seven-days-a-week organization serving homeless people who have nowhere else to go due to behavioral difficulties, mental illness or physical challenges.

**NSO TUMAINI CENTER**

Source: MSU “Spartan Sagas” 2011

*The shelter of last resort in the Cass Corridor*
5. January 5, 2012

- Brought from Neighborhood Services Organization
- Left sided chest pain
- Passed out
- UDS + opiates, cocaine
- No mention of Chest x-ray
- Signed out AMA

- Admitted December 5 delirious, afebrile
- Abdominal wall abscess
- UDS + Methadone & Opiates
- LP Lumbar puncture: clear, pink fluid, 3 cells, glucose 31 (low), protein 56 (elevated). Neurology mentions *mycobacteria*.
- Rx. Clindamycin

Mayo Clinic Center for Tuberculosis
December 16, 2012

- Febrile
- Respiratory distress
  - Moved to MICU
  - Intubated, ventilated
  - Vancomycin, Cefepime added
  - CT scan
  - Bronchoscopy
  - BAL 4+ AFB, drug susceptible
Hospital Course

- Extubated after a week
- 3 AFB smears negative after 3 weeks Rx.
- SW note: “Patient denied at 10 facilities. Pending review at #11. SWR will meet with City of Detroit as well. Patient's barrier to placement includes: past criminal record, current medical issues, and substance abuse. City of Detroit will investigate return to NSO or Detroit Rescue Mission.”
- January 14, 2013: “Patient has a temporary placement for transitional housing tomorrow.”
- Discharged to transitional housing 1/16/13.
Follow-up

• Completed therapy on time.
• Required figuring out where he would be when medication was due to be given &
• Good working relationship with housing staff

March 5, 2015
Putting Case in Context

• 20,000 homeless people in Detroit
• Spread over 138 square miles
• 70,000 abandoned buildings
• 31,000 abandoned homes
Detroit Bankruptcy & Public Health

- April, 2012 Consent Agreement (governor, mayor, city council)
  - More fiscal oversight for state
May 16, 2012

Herman Kiefer Hospital
Built 1928

CITY WANTS TO REPLACE HEALTH DEPT. WITH PRIVATE “INSTITUTE FOR POPULATION HEALTH”

DHWP Director Loretta Davis (center) speaks at Council May 16, 2012 as Deputy Director Betsy Pash (left) listens; the two have incorporated the “Institute for Population Health”
Detroit Bankruptcy & Public Health

- December, 2012 Financial review team appointed
- February, 2013 Governor Rick Snyder announced the state was taking financial control of Detroit
- March, 2013 Governor appointed Kevyn Orr emergency manager
- July 18, 2013 Detroit filed for Chapter 9 bankruptcy
  - Estimated $18-20 billion debt
2013 IPH at Considine Center
Medical records Inaccessible
Lack of community visibility & access
Telephone #s all changed
Holiday Season 2014

• No heat
• Elevators did not work
• Down to 2 nurses, 4 field workers, and 1 clerical staff member
• The state asked if Wayne State might be able to take over TB services
• Moved to a single room in a clinic building while TB clinic space was planned and built
Perspective

Lead Contamination in Flint — An Abject Failure to Protect Public Health

David C. Bellinger, Ph.D.
February 10, 2016 | DOI: 10.1056/NEJMp1601013
TB Cases Reported Homeless During the 12 Months Prior to Diagnosis: Michigan

Thanks to Shona Smith, Epidemiologist, Michigan Department of Health & Human Services
TB Cases Reported Homeless During the Twelve Months Before Diagnosis, Southeast Michigan, 2004-2014

- Southeast Michigan (excluding Detroit)
- City of Detroit

Number of TB Cases Reported as Homeless

Year Counted
Cases of Tuberculosis in Genotype cluster G15185 by Risk Factors, Michigan, 2004-2015

Graph showing the number of TB patients in Genotype cluster G15185 by year from 2004 to 2015, categorized by risk factors: All Cases, Homelessness, Substance Abuse, and Homelessness and Substance Abuse.
Challenges of Homeless TB Cases (1)

• Prolonged time before diagnosis is made – risk for more transmission
  • TB is overwhelmed by other medical problems
  • Chest x-rays are often overlooked or misinterpreted & TB is not considered
  • Drugs, alcohol blunt symptoms

• Patients cannot name contacts
• Patients stay in multiple places, increasing contacts & making it hard to find them
Sites of care of another homeless member of this cluster

- **A** Hospital
  - Oct. 2013
- **B** Hospital
  - Jan. 2014
- **C** Chemotherapy
  - Feb – June 2014
- **D** Imaging Center
  - Sept. 5, 2014
- **E** Cancer Clinic
  - Sept. 10, 2014
- **F** Pulmonary Office
  - Oct. 6, 2014
- **G** Jail
  - Oct. 16, 2014
- **H** DRH
- **I** Hotel & Detention
Challenges (2)

- Mental illness, unwillingness to adhere to treatment
  - Letters of warning, court orders
- Substance abuse
- Risks for complications – hepatitis, alcoholism
- Finding housing, prolonged stays in hospitals
Managing TB in the Homeless in Detroit

- Find and work with partners, including alcohol and drug treatment centers
  - Do TB screening, testing, treatment (follow-up in TB clinic) – 50-100 people per year
    - Mariners Inn Residential treatment program (residents and staff),
    - Salvation Army Harbor Light,
    - Neighborhood Service Organization,
    - Detroit Rescue Mission, Operation Get Down
3HP Data 2014

- Program started in mid-2013
- 53 patients began 3HP in 2014
  - 83.02% completed treatment
  - 21 had DOT at home, remainder came to clinic
- 54 patients began 3HP in 2015
  - 86% completed treatment
  - Biggest barrier – lack of access to Rifapentine
WSUPG TB Clinic - Excellence in

• Case management
• Contact investigation
• Treatment of contacts
• Actively searching for people with LTBI
  • Finding & tracking +QFTs in MDSS
• Aggressively treating LTBI
Many Thanks to:

- Tammy Cooper, R.N.
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- Andrea Augustine
- James Thorpe
- Lisa Shah-Mbengue.
- Linda Woods
- **Shona Smith, Epidemiologist, Michigan Department of Health & Human Services**
Homelessness and TB Toolbox

James Sederberg
Deputy Director

http://www.currytbcenter.ucsf.edu/
Disclosure Statement

• I do not have a financial relationship or conflict of interest with any commercial interest that may have a direct bearing on the subject matter.

• I will present no information on investigational or off-label use of pharmaceutical or medical devices.
Background...

Curry Center has a history of providing tools to address TB control among persons experiencing homelessness

- Shelters and TB: What Staff Need to Know (video)
- Tuberculosis Infection Control: A Practical Manual for Preventing TB (print and online w/ chapter on shelters)
- Practical Solutions for TB Infection Control: Infectiousness and Isolation (web)
Subject Matter Experts and Contributors

- CDC DTBE
  - Sapna Bamrah Morris, MD, MBA
- National Health Care for the Homeless Council
  - John Lozier, MSSW
- HRSA
- United States Interagency Council on Homelessness
- Department of Housing and Urban Development
- Fulton County Department of Health and Wellness
- Los Angeles County Department of Public Health
- New York City Department of Health & Mental Hygiene
- San Francisco Department of Public Health
- Seattle & King County Tuberculosis Control Program
- Toronto Public Health Tuberculosis Program
- Plus many more....
Who are the primary audiences?

Homeless Service Agencies
• Eliminating homelessness among veterans
• Housing First programs
• Shifting away from funding large shelters and transitional housing to more permanent solutions

TB Programs
• Combining with others into Communicable Disease Departments
• Diminishing resources
• Competing priorities, hard to focus on difficult populations that require significant resources
Goals of The Toolkit: Connect TB Programs with Social Service Providers

Provide the resources and tools for TB programs to access experts in homeless services

- Substance use evaluation and treatment
- Mental health resources
- Health care for the homeless
  - Primary care and other health needs
  - Care that extends upon TB control
- How do we establish an MOU with shelters, etc?
- Housing information
Goals of The Toolkit (2):
Connect TB Programs with Social Service Providers

Currently 3705 Homeless Shelters and Social Services.

HOMELESS SHELTER DIRECTORY
Helping The Needy of America

Home » California Homeless Shelters » San Francisco Homeless Shelters

San Francisco Homeless Shelters & Services For The Needy

Welcome to our San Francisco, California Homeless Shelters and Services for the needy page. Below are all of the homeless shelters and services for the needy that provide help to those in need for San Francisco, CA and surrounding cities.
Goal of The Toolkit (3):
Connect Social Service Providers with TB Programs

Provide the resources and tools for homeless service providers to access TB experts and TB information

• What is the risk in my facility?
• Who are my health department contacts?
• How do I educate my staff, volunteers, and clients?
• How do we establish an MOU with TBC programs?
• How do we address:
  o One case of TB
  o More than 1 case???
  o An outbreak?
How to access the toolkit

Website:  
www.currytbcenter.ucsf.edu

Homeless Toolkit:  
www.currytbcenter.ucsf.edu/products/homelessness-and-tb-toolkit
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