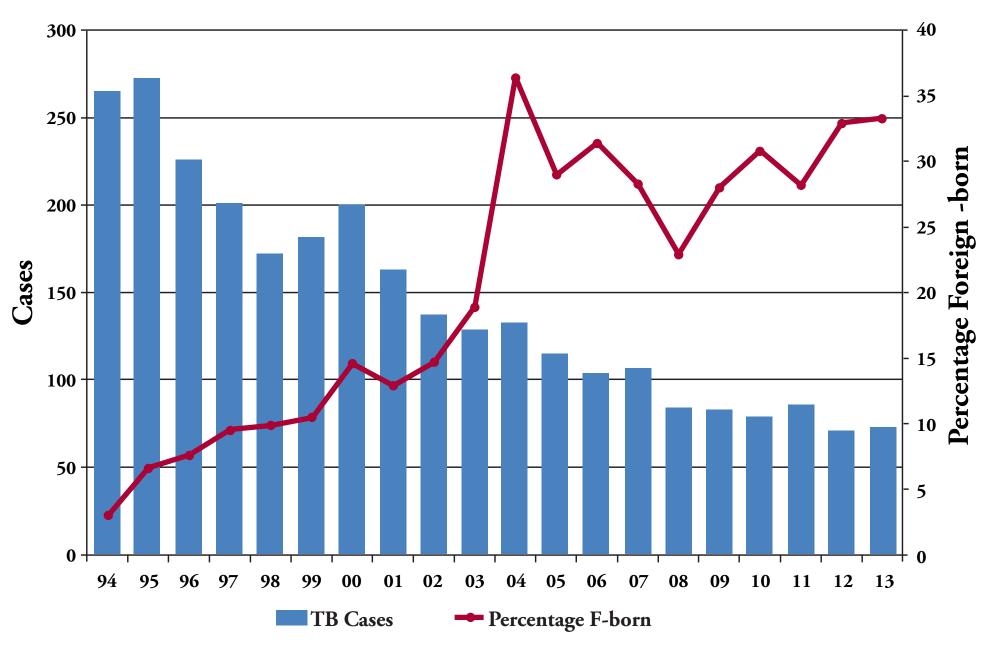
THE THREAT OF TUBERCULOSIS TRANSMISSION AMONG THE US-BORN: LESSONS FROM TWO OUTBREAKS, ARKANSAS Marco A, Patil N, Voyles J, Egbe Y, Mukasa LN



BACKGROUND

- Forty-four percent of TB cases in Arkansas are in genotype clusters, based on spoligotyping and MIRU-24 loci
- In recent years, TB transmission is occurring in hard to reach homeless population, and lately a TB outbreak associated with a night club was identified
- In this report, we describe characteristics of the two clusters and lessons learned
- In Arkansas, TB transmission and TB reactivation is characterized by two surrogate markers;
- proportion of cases born outside the United States
- proportion of cases in genotype clusters

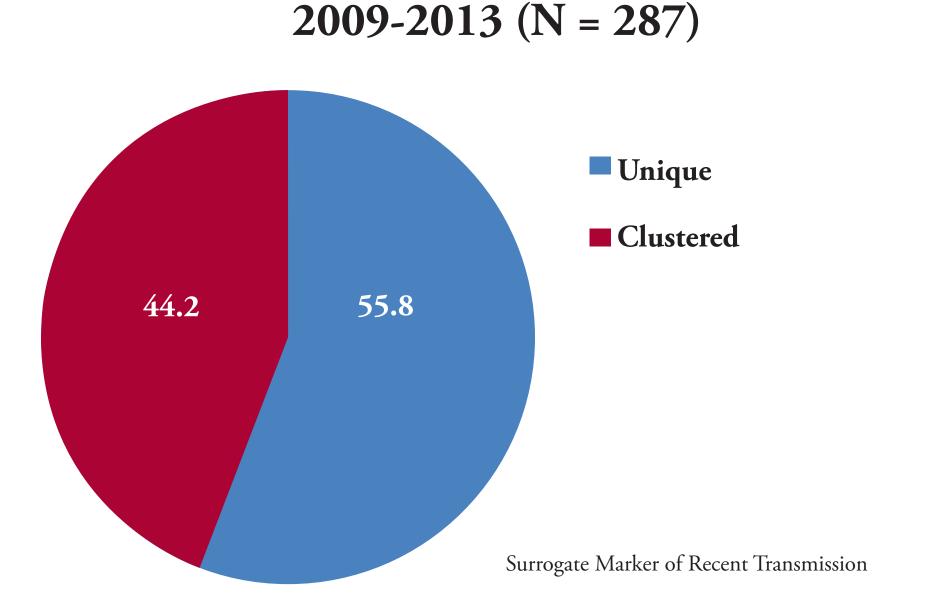


Trends in TB Cases, Arkansas, 1994-2013

WHAT IS A TB GENOTYPE CLUSTER?

- Two or more cases with a matching genotype
- Usually suggests recent transmission (< 5 years)

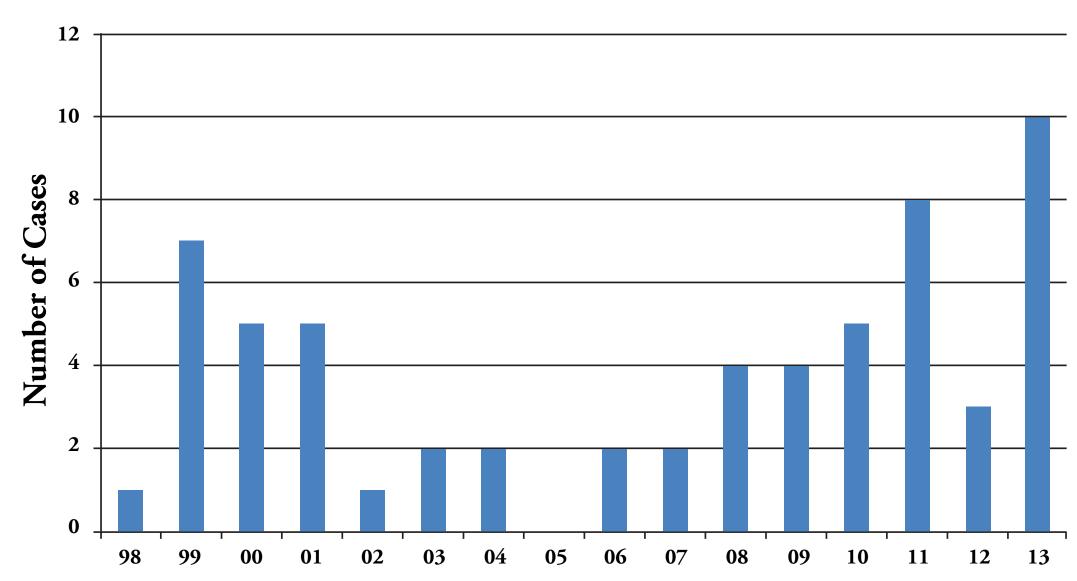
Clustering by Spoligo, MIRU, and MIRU2



TB TRANSMISSION ASSOCIATED WITH HOMELESS **Shelters: Factors**

- Homeless persons at increased risk for TB
- Crowding in homeless shelters
- Tracking homeless persons difficult
- Regulations pertaining to TB screening in shelters are lax

TB Cases in Homeless, Arkansas, 1998-2013



TB TRANSMISSION ASSOCIATED WITH NIGHT **CLUBS: FACTORS**

- Hot, crowded environment
- Clubbers may not know each other outside night club • Social networks in other cities, travel history
- important
- Night club to family, and community transmission • Alcohol and drug use

METHODS

- Genotyping and surveillance data are merged routinely
- Expanded contact investigations through mass screenings are underway
- TB clustered cases were mapped using ArcGIS

Arkansas Department of Health, Little Rock, AR

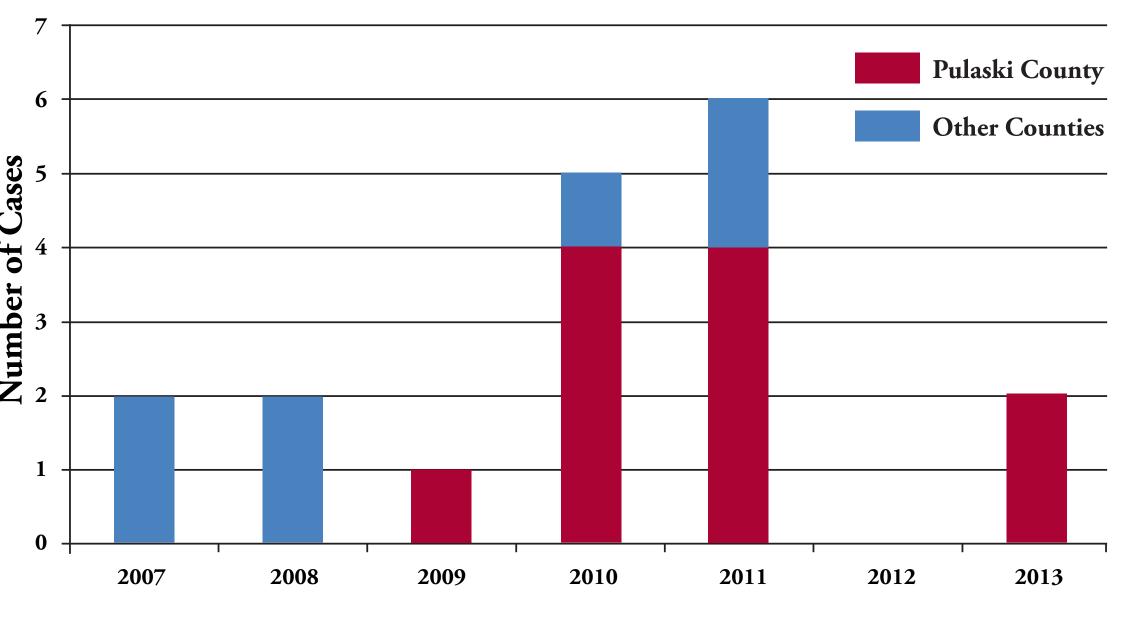
• All TB isolates are sent to the CDC-sponsored genotyping laboratory in Michigan

RESULTS: (A) HOMELESS CLUSTER

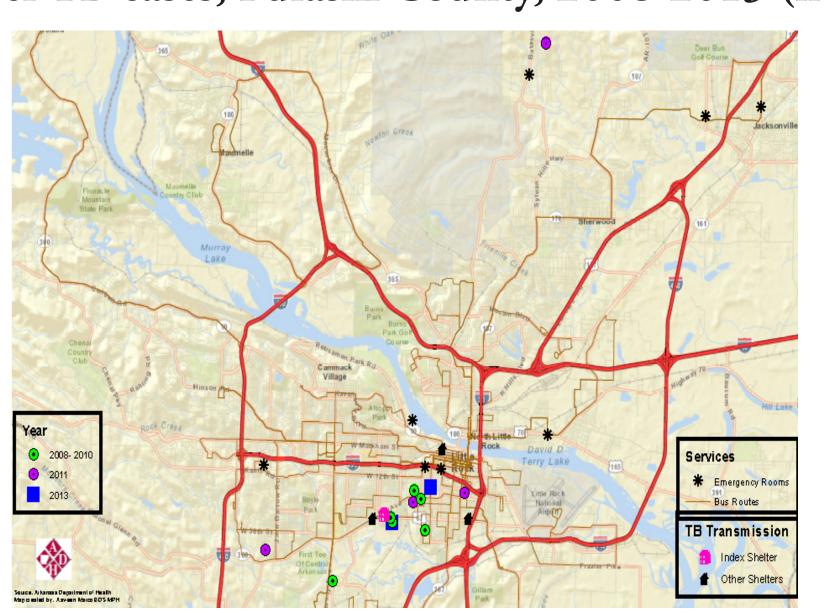
Characteristics of Cluster G00010, Linked to Homeless Shelter, (N = 18

Characteristic	Number	Proportion (%)
Substance Abuse	L	L
Yes	10	55.6
No	8	44.4
Race		
Black	12	66.7
White	6	33.3
Gender		·
Male	16	88.9
Female	2	11.1
Age in years; Median (Range)	47.5 (25-86)	
HIV Status, positive	2	11.1

Cluster G00010 in the Homeless, Arkansas, 2007-2013

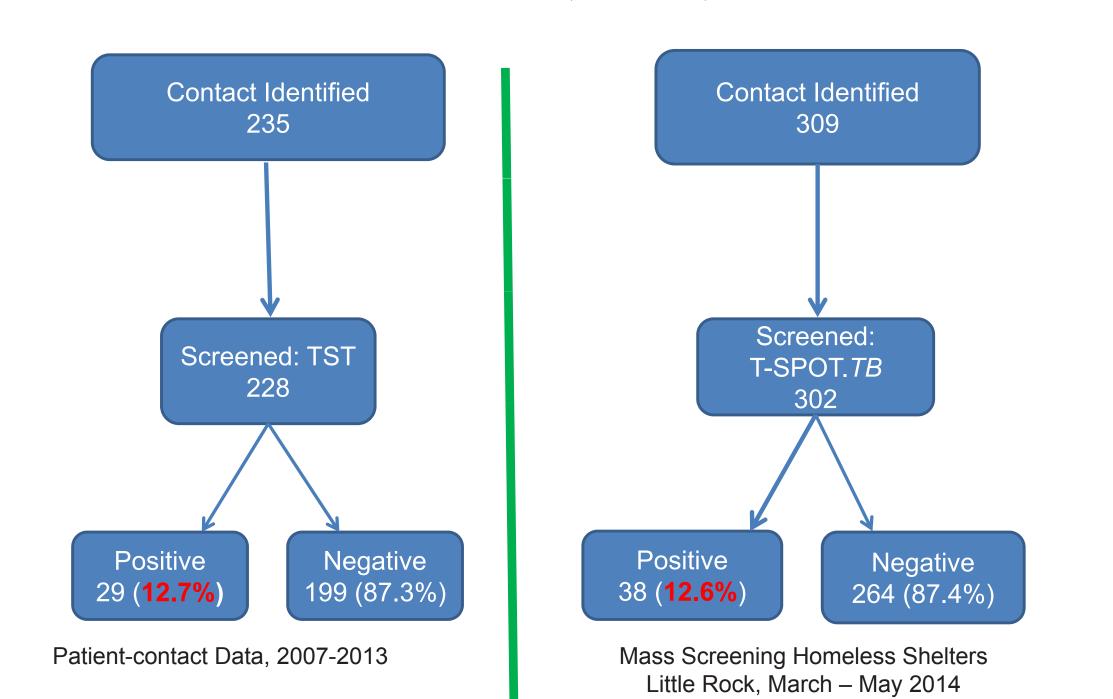


Cluster TB cases, Pulaski County, 2008-2013 (n=12)



8)

Tuberculosis Contact Investigation, Homeless Cluster, 2007-2014 (N = 18)



Characteristic	Number	Proportion (%)		
Race				
Black, non-Hispanic	9	100.0		
Other	0	0.0		
Gender				
Male	4	44.4		
Female	5	55.6		
Age in years; Median (Range)	29 (0.6-37)			
HIV Status, positive	0	0.0		

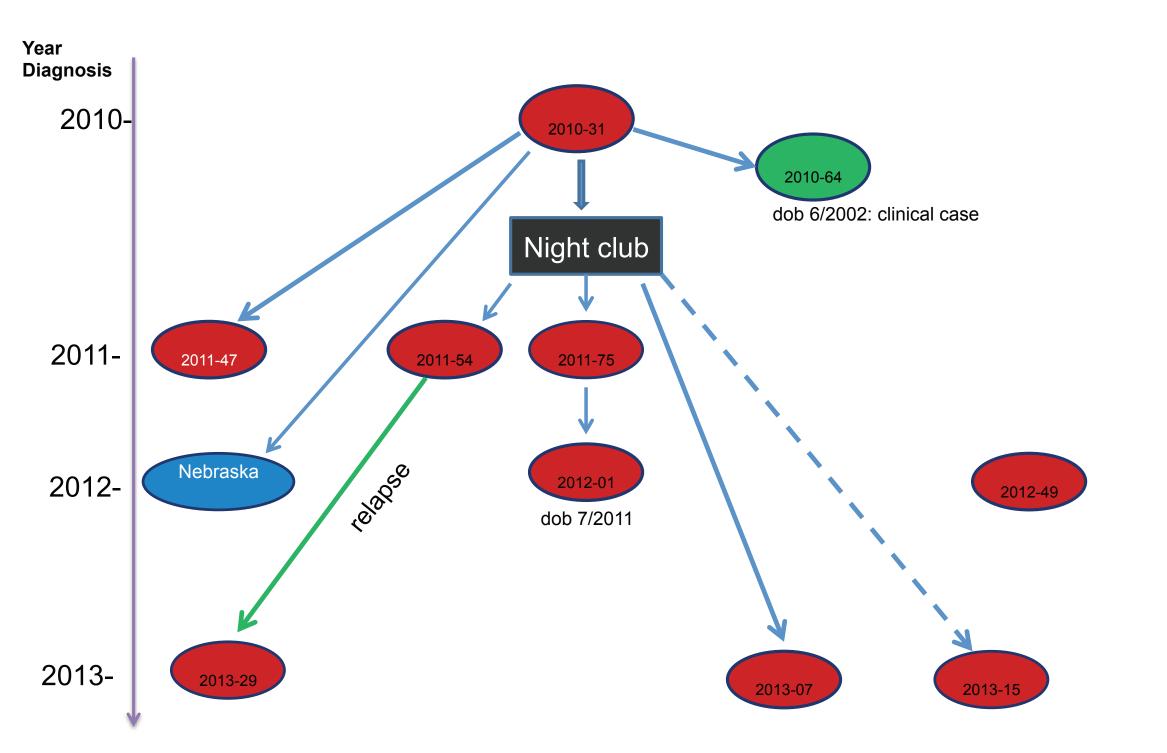
RESULTS: (B) TB CLUSTER ASSOCIATED WITH NIGHT CLUB

Potential for Intense TB Transmission at the Nightclub

- 50-80 patrons a night
- Maximum occupancy 150
- Operates Friday --Sunday
- Low ceiling
- Improvised ventilation system
- No windows: Dark Inside



TB Cluster, Genotype G02192, Desha County, 2010-2013, (n = 10)



- Night club

RECOMMENDATION

- TB Program should engage homeless population coalition on a routine, long term basis
- Review ventilation systems for night clubs



Characteristics of Cluster Cases, Dumas (N=8)

Cluster TB Cases, Desha County, 2010-2013 (N=9)



DISCUSSION

• Intense TB transmission among the US-born population is still reported in Arkansas

- Homeless shelters

• Control of TB outbreaks requires a dedicated outreach effort, including incentives and enablers

• Treatment of LTBI cases is by 12-dose isoniazid-rifapentine regimen, DOT

• Develop TB screening protocols for all homeless shelters in Arkansas