



TB Talk – New England

TB - “The Disease that Keeps on Giving” **January 16, 2013**

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Objectives



- Discuss case management of infectious pulmonary TB case in foreign-born adult
- List social/medical, family and employer issues
- Discuss strategies to manage the home and work setting of active TB case

Case History



- Index case is a female in her 40s
- 9/24/11- Seen by provider for cough
- 10/3/11 - S/S persist - CXR shows LL pneumonia with bilat upper lobe infiltrates; Z-Pak/cough syrup
- 12/23/11 - Ongoing cough worsening since 12/14/11 - Strep negative; bronchitis, pharyngitis
- 12/28/11 – S/S persist and now fevers - dx. same Augmentin and Levoquin added

Case History (cont.)



- 2/18/12 – persistent cough - TST planted, CXR & Zithro ordered; Pt. stopped after few doses
- 2/20/12 TST 40x50 mm, abnormal CXR with inflammatory process and question of TB
- 2/24/12 RISE TB Clinic received referral - RIDH called
- Pt. placed on isolation
- ***“Let the games begin...”***

Physical Exam



- 2/27/12 Pt. evaluated at TB Clinic
- Admits to hx of TST+ with LTBI tx for 9 months in 1996-97; records confirmed
- Cough/fever/night sweats/wt. loss since 10/11
- Lungs clear and no cervical adenopathy

Laboratory Order/Results



- HIV rapid test – negative
- Five sputa - 1 thru 3 specimen neg; 4 and 5 specimen few AFB
- CBC/WNL
- AST = 25

Social History



- Born in Cambodia and 1980 arrived in U.S.
- Lives with 2 daughters and intermittent BF of Dgtr 1
- Dgtr 2 and granddaughter visit frequently
- Brother's family of 5 on 2nd floor and estranged from Pt.
- 2nd brother, wife and 2 children visit occasionally

Social History



- Both brothers with children not cooperating with testing
- Dgtr #2 not dependable for care of her dgtr (grddgtr of Pt.)

CP Household and Family Contacts



1st Floor – Pt. and Family:

Pt., Dgtr #1 and her BF, Dgtr #3

**Dgtr #1 - diagnosed with
active TB**

Dgtr #3 - LTBI

BF - not fully evaluated

CP Household and Family Contacts



**1st Floor – Pt. and Family:
Pt., Dgtr #1 and her BF, Dgtr #3**

**Dgtr #1 - Active TB
Dgtr #3 - LTBI
BF - not fully evaluated**

Pt.'s Family:

Dgtr #2, BF, 1 yo

**Dgtr #2 - never evaluated
1 yo – evaluated, window
prophy, not infected
BF - TST+, never showed for
further eval**

CP Household and Family Contacts



**2nd Floor – Extended Family:
brother of Pt., his wife, and 3 children
Both Pt. and the family deny contact**

**NOT EVALUATED
despite multiple visits and letters
from DOH**

**1st Floor – Pt. and Family:
Pt., Dgtr #1 and her BF, Dgtr #3**

**Dgtr #1 – diagnosed with
active TB**

Dgtr #3 - LTBI

BF - not fully evaluated

Pt.'s Family:

Dgtr #2, BF, 1 yo

Dgtr #2 - never evaluated

**1 yo – evaluated, window
prophyl, not infected**

**BF - TST+, never showed for
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CP Household and Family Contacts



2nd Floor – Extended Family:
brother of Pt., his wife, and 3 children
Both CP and the family deny contact
NOT EVALUATED
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1st Floor – Pt. and Family:
Pt., Dgtr #1 and her BF, Dgtr #3

Dgtr #1 – diagnosed with
active TB

Dgtr #3 - LTBI

BF - not fully evaluated

Pt. Family:
Dgtr #2, BF, 1 yo

Dgtr #2 - never evaluated

1yo – evaluated, window
prophy, not infected

BF - TST+, never showed for
further eval

Extended Family:
2nd brother of Pt., his wife, 3 yo, 4 yo
Pt. denies contact

Brother – LTBI

Wife – LTBI

3 yo – LTBI

4 yo – not infected

Pt.'s Treatment Course



- Started drug therapy 3/5/12
- Rifampin (RIF) 600mg
- Isoniazid (INH) 300mg
- Ethambutol (EMB) 1200mg
- Pyrazinamide (PZA) 1000mg

Drug Susceptibility Testing



- Sputum collected 2/18/12; susceptibility reported on 3/26/12
- INH and Streptomycin RESISTANT
- INH discontinued
- One contact already on INH was switched to RIF
- Other contacts were evaluated for treatment post-susceptibilities and RIF prescribed PRN

Isolation History



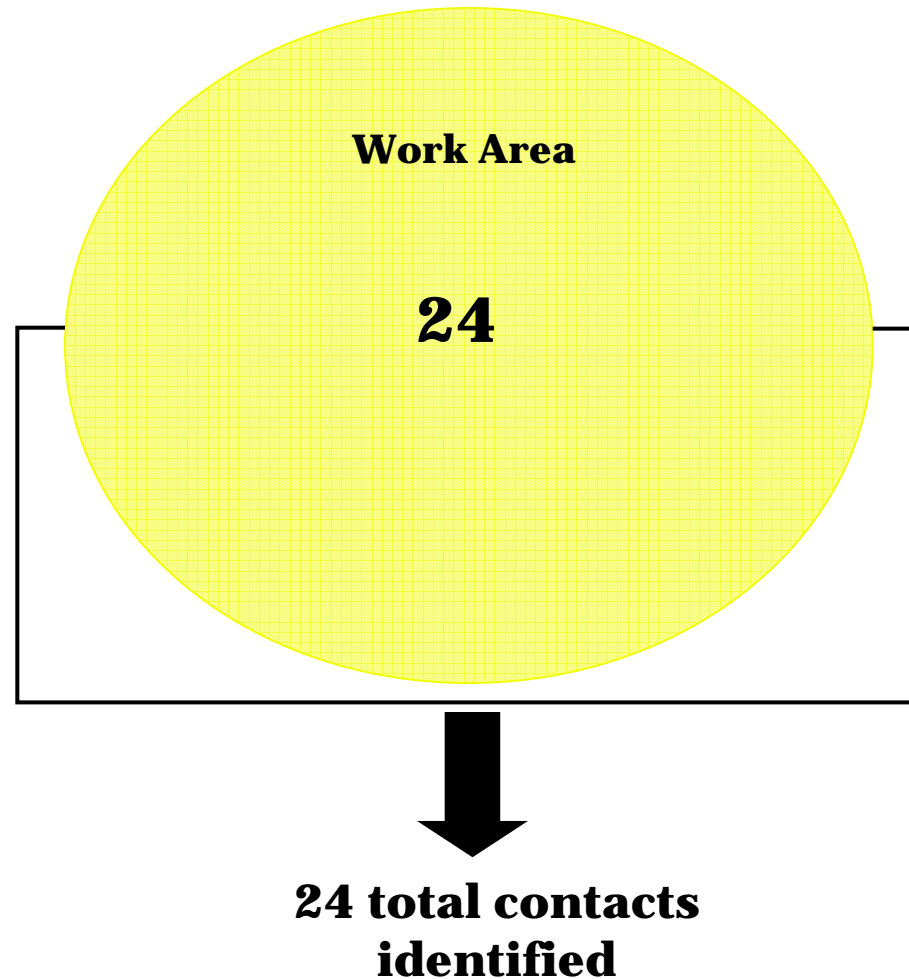
- **2/24/12** initiated after suspicious CXR at PCP
- **3/26/12** Pt. went to work site to pick up paycheck!
- **3/28/12** home visit to reinforce isolation to home
- **5/21/12** left house to appear at court
- **6/4/12** home isolation d/c'd

Work Site Evaluation/Plan



- **3/6/12 Initial interview - pt. states works with 7 others**
- **3/9/12 Call placed to owner of company who stated 225 employees with 80% foreign born**
- **3/12/12 Site visit with the 3 co-owners to discuss plan for employee informational session for 3/19/12 and owner compiles list of the possible exposed employees**
- **3/15/12 Owner requests informational session sooner because employee anxiety and session held that day**
- **3/27/12 1st TST clinic per owner request**

Work TST Clinic



Work TST Clinic – 1st Round



- 1st round of testing 3/27/12
- Results:
 - 24 contacts identified
 - 18 TST negative
 - 5 contacts are TST+
 - All foreign-born (4 from Guatemala, 1 from Cambodia)
 - All evaluated at RISE Clinic and started on LTBI meds
 - 1 contact had been treated for active TB in 2001
 - Evaluated at RISE for s/s active disease and negative
 - RISE would later determine to retreat based on contact investigation results

Work TST Clinic – 2nd Round



- 2nd round of testing 6/5/12
- Results:
 - 18 contacts negative 1st round to be retested
 - 16 contacts negative 2nd TST
 - 1 individual who never followed up for 2nd TST
 - 1 CONVERTER

Work TST Clinic – 1st Circle



- Summary results of testing
 - 24 contacts identified
 - 23 fully evaluated (1st and 2nd TST)
 - 16 Not infected
 - 7 Infected and started on LTBI therapy
 - 6 previously positive
 - 1 Converter**

The Converter



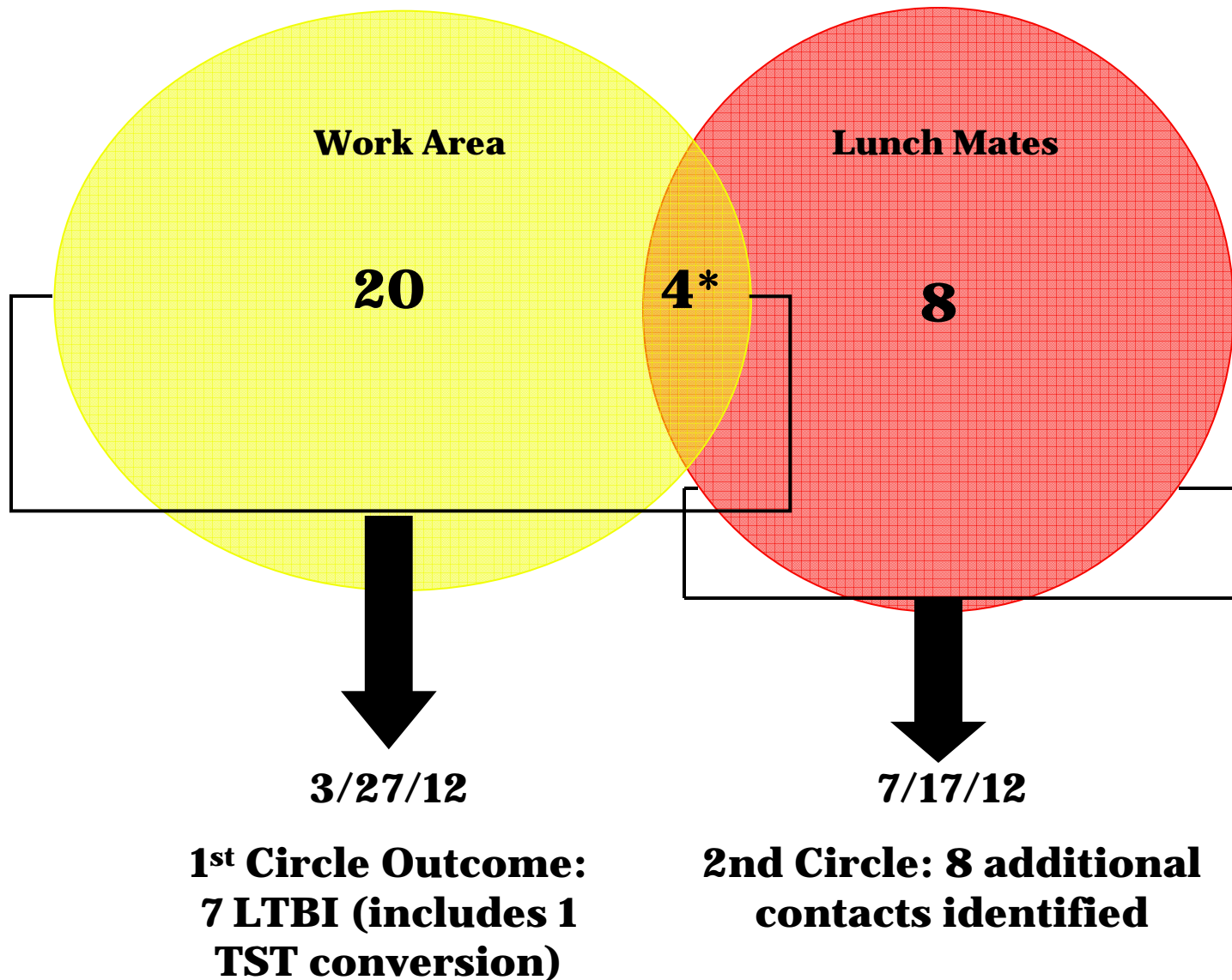
- Converter was not originally on employee list for TST
- Remember, only those working in the same department as pt. were to be tested
- Converter added as a result of brief exposure when pt. went to worksite 3/26/12 to pick up paycheck!

Why this conversion?



- If the converter didn't work in the same department, was this brief office encounter enough exposure or was she exposed somewhere else?
- This conversion required assessment to determine other work areas for possible exposure

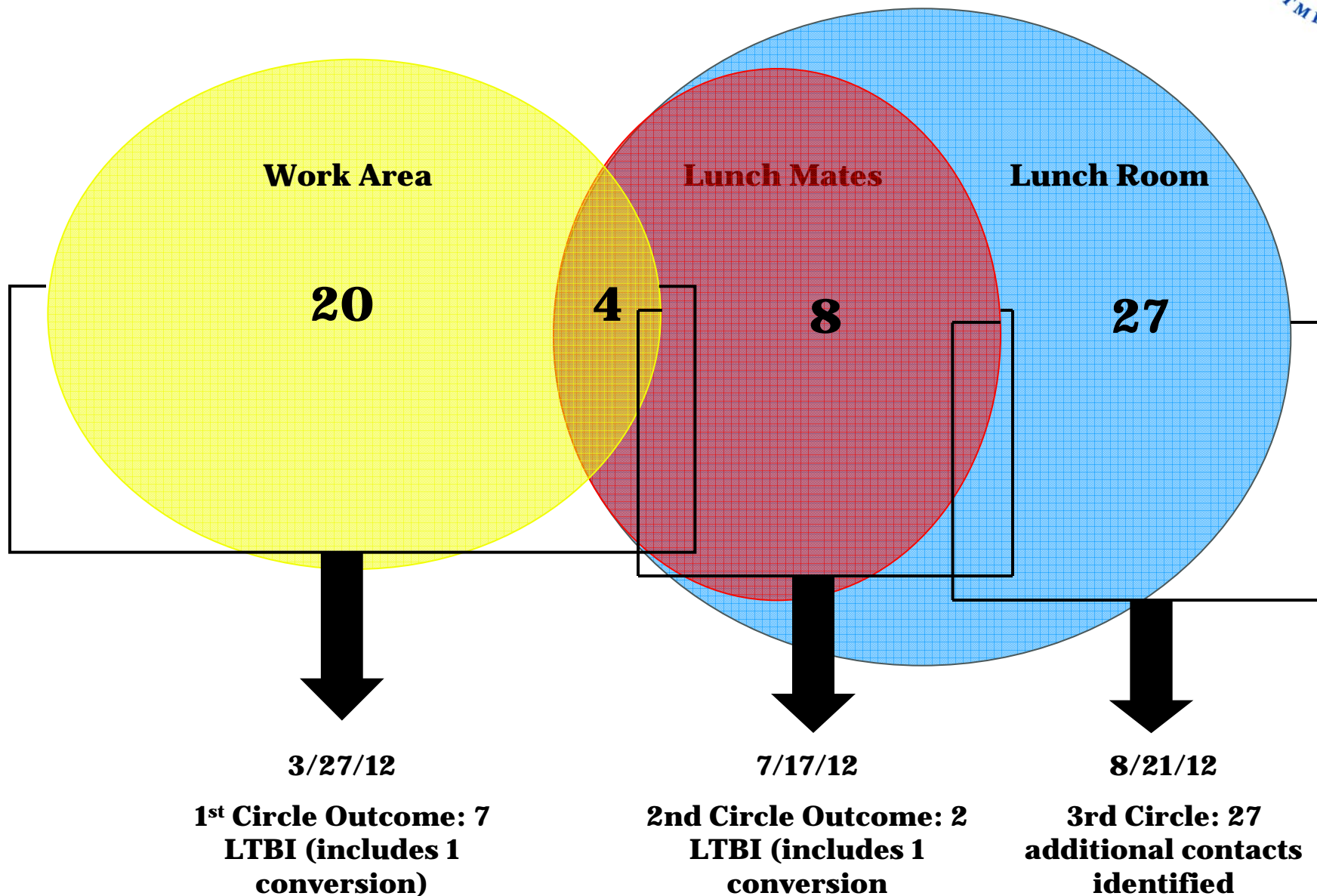
***There were 12 lunch mates; 4 had already been screened in the first circle of testing**



Work TST Clinic – 2nd Circle



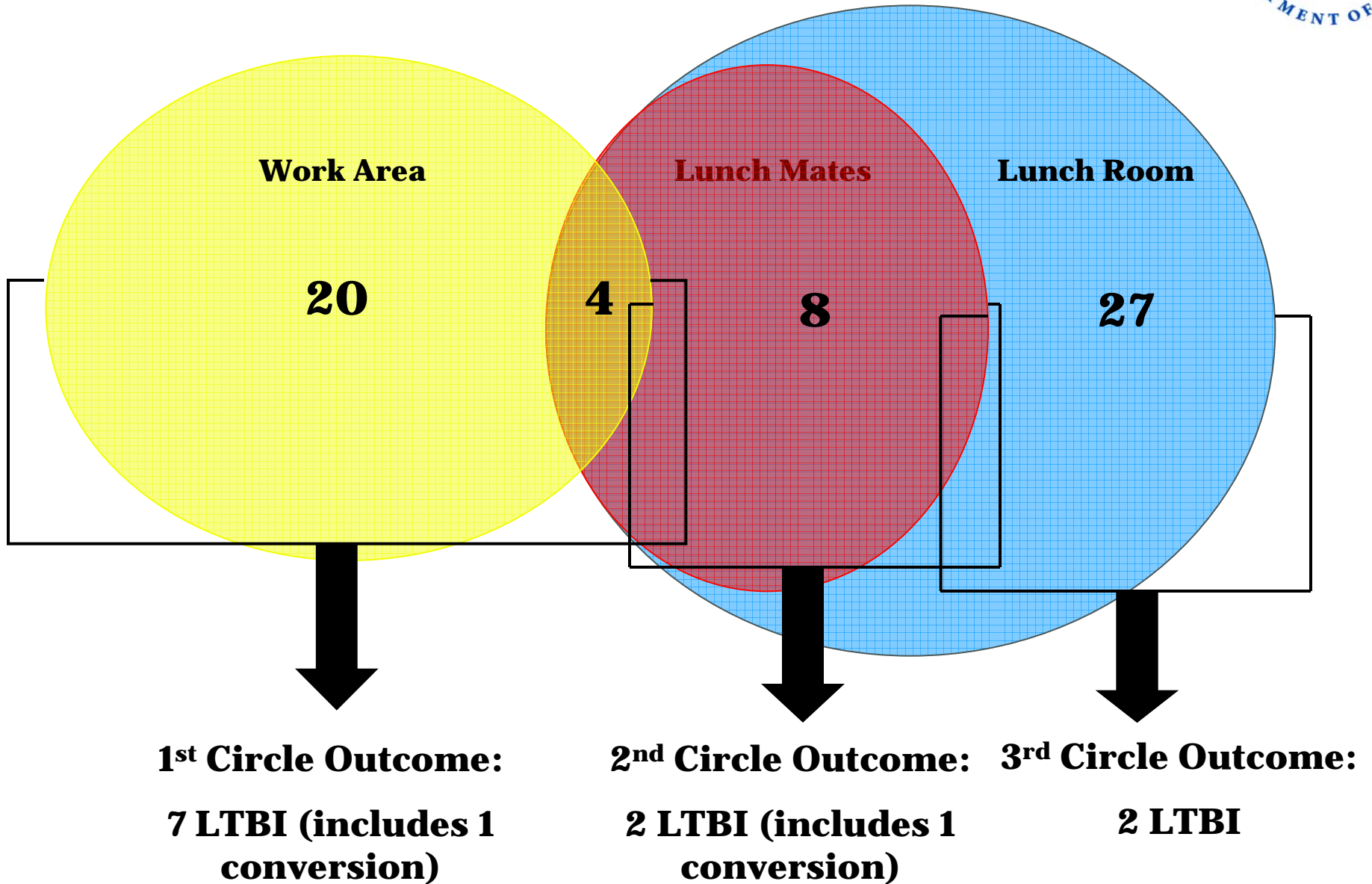
- 2nd circle of testing 7/17/12
- Pt.'s regular lunch mates tested (8 additional individuals)
- Results:
 - 5 TST negative
 - 1 QFT negative
 - 2 positive
 - 1 Cambodian male, claims never tested but then says had positive TST in 1986
 - 1 U.S. born female, reports negative TST 12 yrs ago, states she has lunch with index 2x/wk, no recent travel outside of U.S.
 - This person considered a “**CONVERTER**”



Work TST Clinic – 3rd Circle



- 3rd circle of testing 8/21/12
- Increased TST testing to additional 27 individuals using lunch room in same shift as pt.
- 24 fully evaluated
 - 21 TST negative
 - 1 QFT negative
 - 1 previous positive
 - Evaluated at RISE and started on 12wk DOT LTBI regimen
 - 1 TST+
 - Portuguese female with no previous TST documentation
 - Evaluated at RISE and started on LTBI meds



Worksite Summary - Detailed



- 59 total contacts identified over 5 months of investigation
- 3 circles of testing
- 93% of contacts were fully evaluated
- Of those 93% evaluated, 20% were diagnosed with LTBI (11 individuals, including 2 conversions)
- LTBI therapy completion for the 11 contacts
 - 7 completed therapy
 - 1 lost
 - 1 d/c'ed for severe N/V
 - 2 continue and expected to complete

Concentric Circle Discussion



- Was the 3rd circle necessary?
- Was “converter” from 2nd circle really a conversion?
- Time from exposure to testing – correct?

Worksite Considerations



- High volume of foreign-born employees, 75-80% of the total 225 employees
- Language barriers
- Educating employer and employees
- Employer's concern regarding interruption in productivity
- Employer's stress as a result of 3 clinics
- Question of increased employee anxiety regarding infection
- Undocumented status and job security
- Protecting confidentiality of index case and those requiring evaluation

Total Contacts



Worksite, family & household, and a healthcare office

- 108 total contacts
- 84% fully evaluated
- Of those fully evaluated, 19% diagnosed with LTBI (17 individuals)
- 1 active TB conversion from household
- 2 LTBI conversions from worksite
- LTBI therapy completion for contacts:
 - 9 have completed therapy (56%)
 - 1 LTFU
 - 1 d/c'd for s/e
 - 5 continue and expected to complete

Contacts Summary - Detailed



Relationship to Index Case								
	Worksite		Healthcare Office		Family/ Household		Total Contacts	
	No.	%	No.	%	No.	%	No.	%
Number of Contacts	59		34		15		108	
Evaluation Status	No.	% (n=59)	No.	% (n=34)	No.	% (n=13)	No.	% (n=108)
Not Evaluated	4	6.8%	5	14.7%	8	53.3%	17	15.7%
Fully Evaluated	55	93.2%	29	85.3%	7	46.7%	91	84.3%
Outcomes of those Fully Evaluated	No.	% (n=55)	No.	% (n=29)	No.	% (n=7)	No.	% (n=91)
Not Infected	44	80.0%	27	93.1%	2	28.6%	73	80.2%
Active Disease	0	0.0%	0	0.0%	1	14.3%	1	1.1%
Infected - no treatment ^	0	0.0%	1	3.4%	0	0.0%	1	1.1%
Infected - treat	11	20.0%	1	3.4%	4	57.1%	16	17.6%
Status of LTBI Therapy for Infected-treat	No.	% (n=11)	No.	% (n=1)	No.	% (n=4)	No.	% (n=16)
Completed	7	63.6%	1	100.0%	1	25.0%	9	56.3%
Lost to follow-up	1	9.1%	0	0.0%	0	0.0%	1	6.3%
Side-effects	1	9.1%	0	0.0%	0	0.0%	1	6.3%
Continuing therapy	2	18.2%	0	0.0%	3	75.0%	5	31.3%
Conversions	2		0		1		3	

^ no treatment due to previous s/e with LTBI therapy

Case Management/DOT Issues



- Pt.'s family not trusting, does not disclose contacts
- Lack of trust/belief in medical system
- ? Understanding of medical complications
- Index case is breadwinner—needs to work
- Dgtr not reliable to follow thru with the care of child; sister stepped in to manage the care

Strategies for Success



- Pt.'s 1st dgtr willing to ensure the grdgr receives meds on weekends
- RIDH worked with the most convenient schedule for all of them to prove we would support them
- The cooperation of the employer and diligent work of RIDH nurse made this a much easier situation to provide DOT at the worksite
- Consistent DOT worker strengthened the trust

Team Approach



- RISE medical staff stressed the same messages as public health staff in getting the family contacts in for testing
- RISE physician and Cambodian DOT interpreter gains trust of Pt.
- In addition, the employer was on board with the necessary requirements for TST and getting employees to clinic

Review Objectives



- Discuss case management of infectious pulmonary TB case in foreign-born adult
- List social/medical, family and employer issues
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Lessons Learned



Remember the Importance of:

- Consistency in messages
- Developing trust with Pt. and family
- Consistency of DOT worker
- MOST of ALL – Anticipate worksite issues and strategies to keep things smooth