

Tuberculosis Contact Investigation in a High School: Using Concentric Circles

Sacramento County Health and Human Services Division of Public Health

July 22, 2014

Venue

- ❖ High School (Grade 9-12)
- ❖ Census: ~1984 students
- ❖ Average Class Size: 21 students (2011/2012)

Index Case

- ❖ Student with history of cough, fever, night sweats for 2 months
- ❖ Call to HD from school nurse who was concerned about student's positive TST, frequent absences
- ❖ HD called PCP to get results of CXR. Student excluded from school based on CXR
- ❖ Sputum smear results 3+ (positive)

1st cohort: 5Mar14

- ❖ Included students in classroom/period and those involved in extracurricular activities with index case
- ❖ Census - 116 Read /146 Placed (79.4%)
- ❖ TST (+) – 29 (25.0%)
- ❖ Prior Positives – 2 (1.7%)

1st Cohort: 11 Mar 14

- ❖ Catch up for those who missed 3/5 screening
- ❖ Census - 14 Read / 25 Placed (56.0%)
- ❖ TST (+) – 5 (35.7%)
- ❖ Refusal - 1

Ventilation System

- ❖ California Department of Public Health Survey
- ❖ Room-to-room ventilation
- ❖ 12 rooms included
- ❖ Varying level of air filtration and circulation
 - ❖ 90-100% re-circulation in some classrooms
 - ❖ Shared ventilation between classes

Ventilation



2nd Cohort: 5May14

- ❖ Expansion to adjoining classrooms with shared ventilation
- ❖ Students in period after index case
- ❖ 2nd round testing for 1st cohort
- ❖ Conducted CXR at school
- ❖ Census – 239 Read / 243 Placed
- ❖ TST (+) – 64 (26.8%)
- ❖ Total 30 TST conversion

2nd Cohort: 19May14

- ❖ Catch up for those who did not show for 5/5 testing
- ❖ Census – 81 Read / 88 Placed (92%)
- ❖ TST (+) – 16 (19.7%)

3rd Cohort : 22Aug14

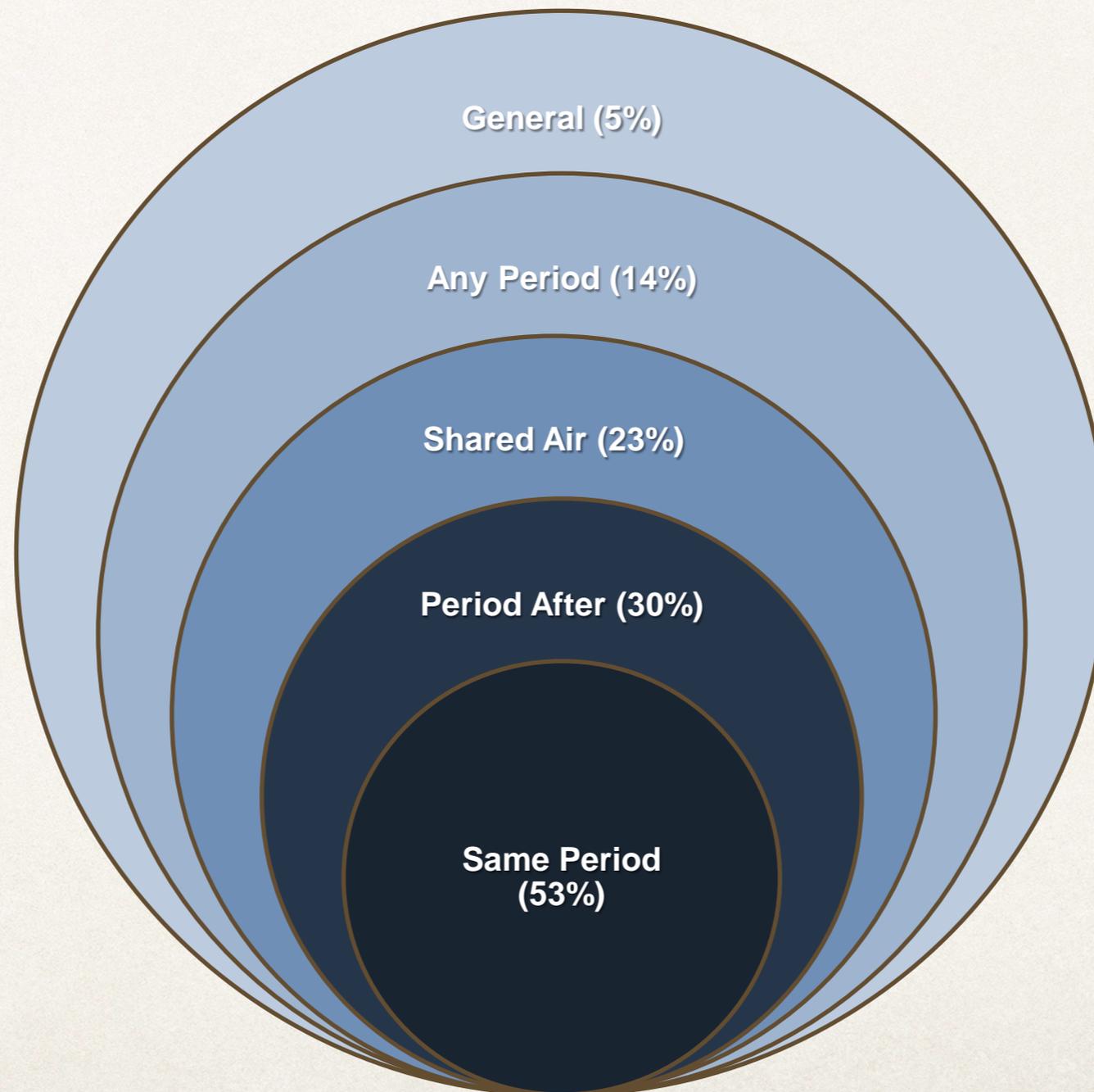
- ❖ Expansion to any students was in classrooms regardless of period
- ❖ General school population also tested
- ❖ Census – Placed: 343 Read: 330
- ❖ TST (+) – 36 (10.9%)
- ❖ Cohort 4 Positivity Rate: 14%
- ❖ General Population Positivity Rate: 5%

General Testing: 13Jun14

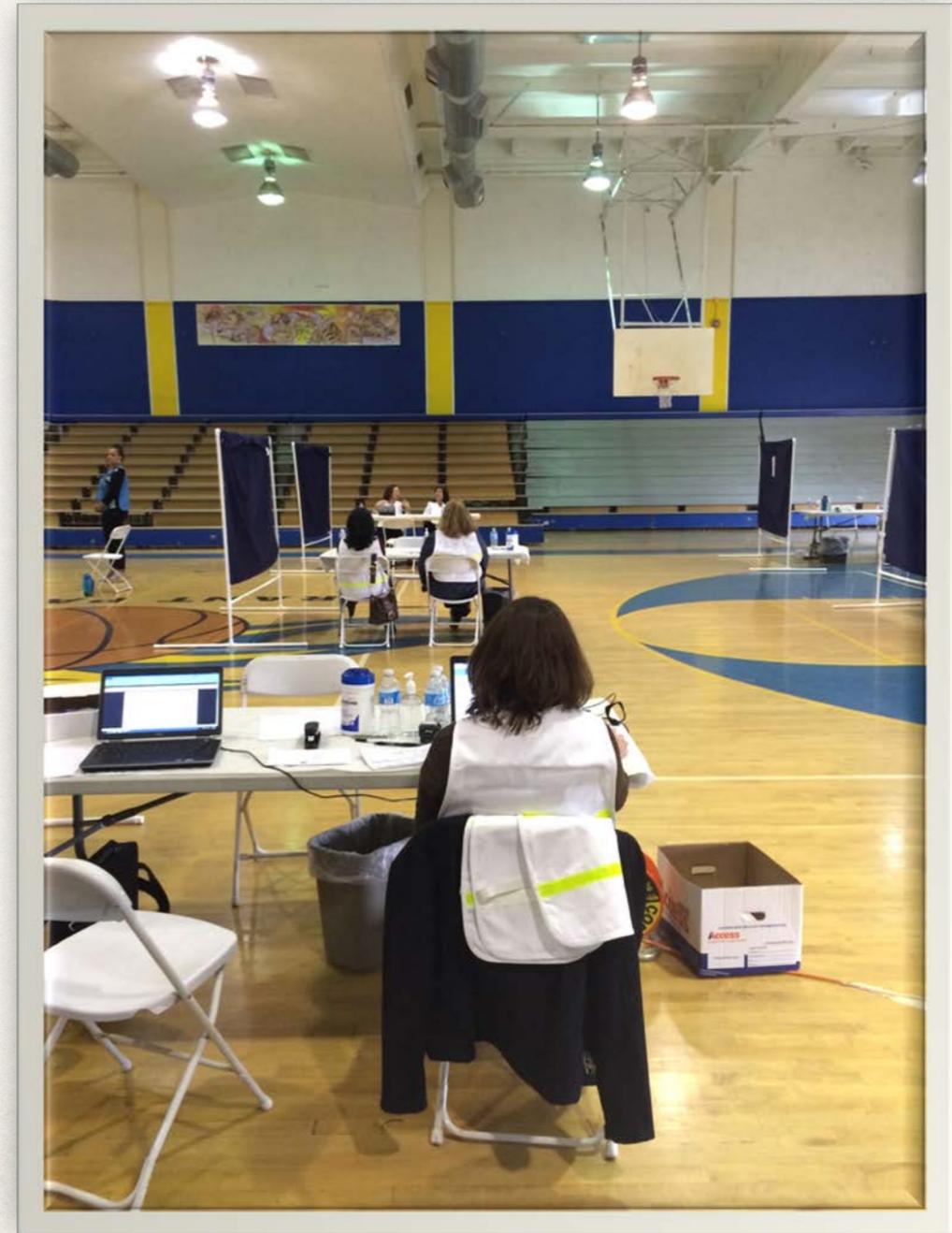
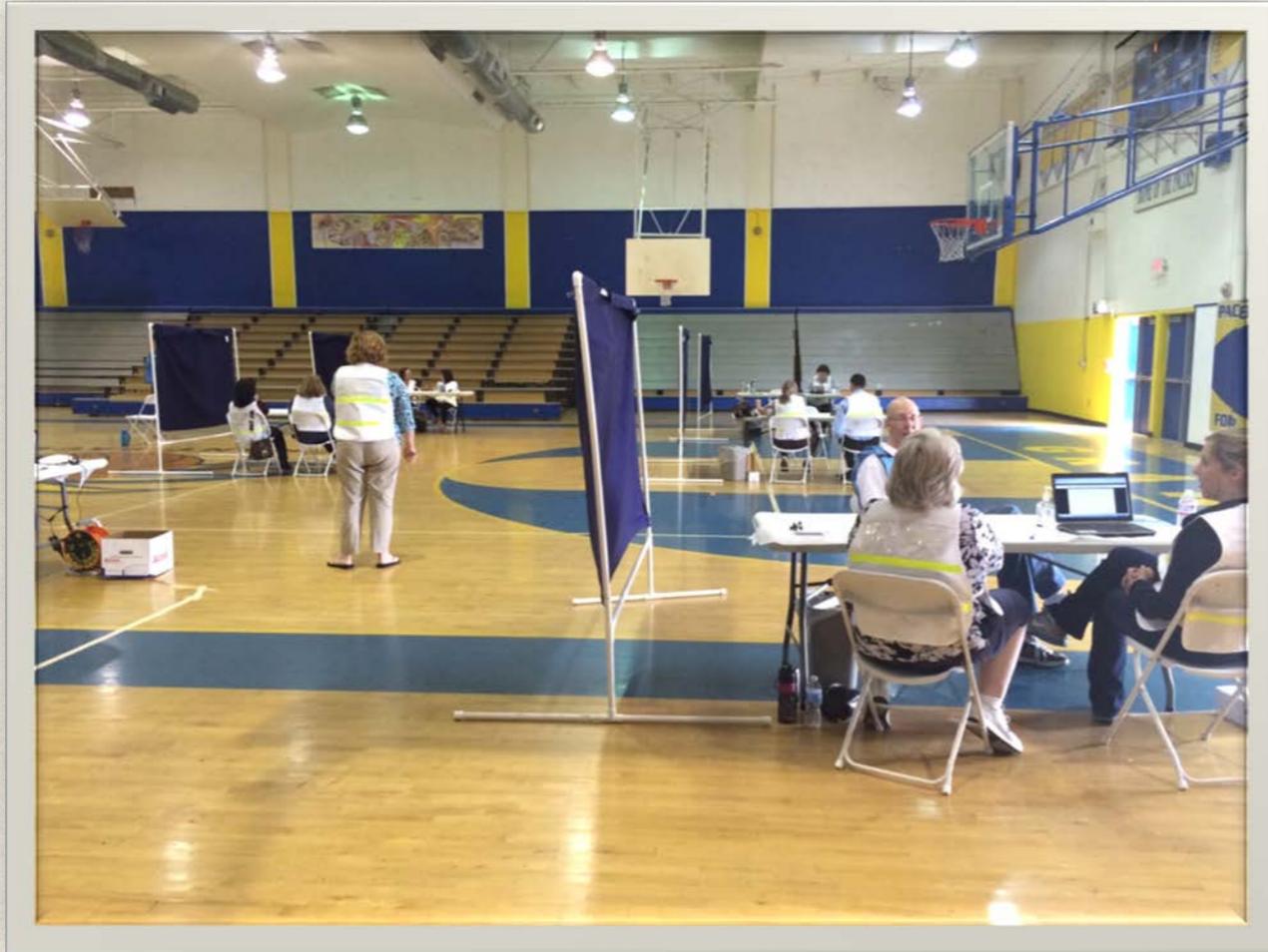
- ❖ Opened to rest of school
- ❖ Census: 72: 55 QFT / 17 TST
- ❖ Positive Total: 2 (2.8%)
 - ❖ TST (+) – 1 (5.9%)
 - ❖ QFT (+) – 1 (1.8%)

Summary

❖ 4 TB3 Total



Testing Setup



Testing Setup



Electronic Data Collection

- ❖ iPad/Laptop

- ❖ Day 1 Survey

- ❖ Symptom Review

- ❖ Electronic Medical Record

Day 1 Survey

- ❖ How is TB transmitted?

- ❖ Is TB Treatable?

 - ❖ Yes: 67.0%

 - ❖ No: 6.7%

 - ❖ Do Not Know: 26.3%

- ❖ Knowledge Questions Discontinued

Lessons

- ❖ Use of Emergency preparedness for logistics
- ❖ Surge capacity
- ❖ Ventilation system – shared ventilation system
- ❖ Risk communication
- ❖ CXR on-site
- ❖ Quantiferon testing vs. TST for large screening events
- ❖ Results of survey
- ❖ Use of INH/Rifapentine for treatment
- ❖ Law allowing minors to consent to

Questions

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