

# **Tuberculosis Indicators Project (TIP) Overview**

**Tuberculosis Control Branch (TBCB)  
Division of Communicable Disease Control  
Center for Infectious Diseases  
California Department of Public Health**

“Careful attention must be paid to ensuring that TB control programs become what they need to be rather than maintained as they have been.”

Institute of Medicine, *Ending Neglect:  
The Elimination of Tuberculosis in the  
United States*

# TB Indicators Project (TIP) Components

- Formal process for using indicators to evaluate and improve program performance
- Partnership between the state TBCB and the 10 local TB programs that report at least 55 cases/year
  - These programs report > 75% of CA's TB morbidity

# Why Is TIP Needed?

With TIP, we hope to be able to better answer the following questions:

- Are we successfully controlling and preventing tuberculosis in California?
- What interventions are needed to improve our TB control practices/outcomes?

# California TB Indicators

18 indicators grouped into 5 goal areas

- Strengthen infrastructure
- Identify and report TB cases
- Ensure completion of therapy for TB cases
- Identify, evaluate, and treat contacts
- Reduce occurrence of sentinel events

# TIP Indicators

## Identification and Reporting

- TB Case Rate
- Timely Reporting
- Complete Reporting
- Culture Identification

## Completion of Therapy

- Recommended Initial Therapy
- Timely Treatment
- Culture Conversion
- Appropriate DOT
- Inappropriate SAT
- Timely Completion of Therapy
- Not Defaulting from Treatment

## Contact Investigation

- Contact Identification
- Contact Evaluation
- Contact LTBI Treatment Initiation
- Contact LTBI Treatment Completion

## Sentinel Events

- Pediatric TB Cases
- TB Deaths

## Infrastructure

- Program Capacity (self-assessment)

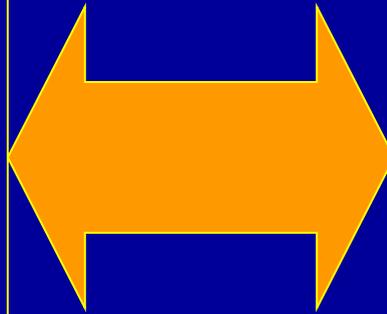
# How has TIP Changed the Way We Use Data?

- Systematic assessment of comprehensive local program performance data
- Greater scope of data analysis
- More proactive use of data
  - To prioritize and plan interventions
  - To identify successful models for replication

## STATE

### TIP TEAM

Program Liaison  
Epidemiologist



## LOCAL

### TIP TEAM

TB Controller  
Program Manager  
Epidemiologist  
Staff

## STATE RESPONSIBILITIES

Provide LHDs with indicator reports, program and epidemiologic consultation

Provide direct support (e.g., meeting facilitation and follow-up, drafting action plan)

## LOCAL RESPONSIBILITIES

Select at least one indicator to target for improvement

Establish a realistic local performance objective

Develop, implement and evaluate an action plan to improve the selected indicator

# TIP Process

**1) Initial Assessment**

**2) Planning**

**3) Action Plan Development**

**4) Action Plan Implementation**

**5) Evaluation and Reassessment**



# Step 1: The Initial Assessment

- Complete TB Program Assessment Tool (TPAT)
- Perform preliminary review of quantitative indicator results



# Using TPAT Findings

- Identify program infrastructure capacity strengths and gaps
- Identify actions needed to strengthen TB program infrastructure
- Identify program capacity factors contributing to good or poor performance as measured by the quantitative indicators

# SURF COUNTY - Indicators at a Glance (excerpt)

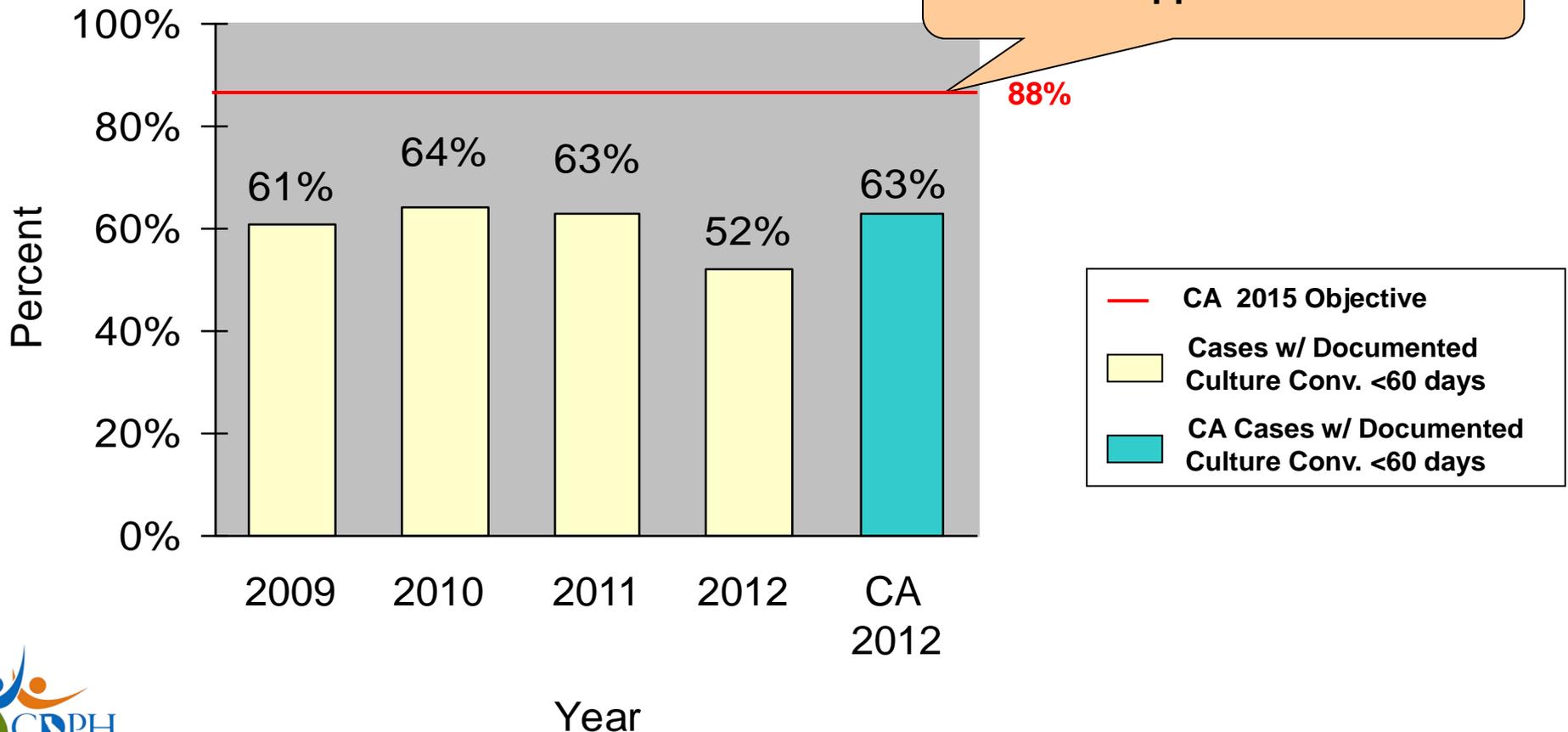
Indicator	Year	Surf Co. Data	CA Data	% (n) of CA	CA 2015 Obj.
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**GOAL C: Ensure timely completion of appropriate therapy for all persons with tuberculosis.**

<b>Recommended Initial Therapy</b>	2013	<b>89%</b>	79%	3.2% (4)	95%
<b>Timely Treatment</b>	2013	<b>95%</b>	90%	1.8% (2)	95%
<b>Culture Conversion</b>	2012	<b>52%</b>	63%	0.9% (6)	88%

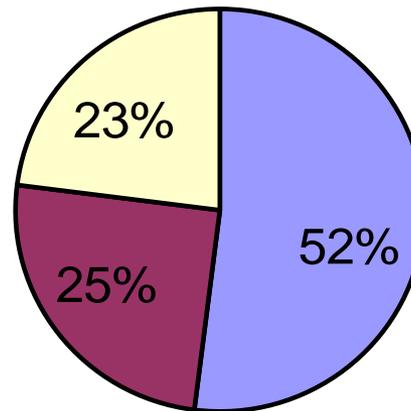
# Surf County Culture Conversion Indicator Results

Performance Trends in Culture Conversion  
California Objectives



# Surf County Culture Conversion Stratification

Documented Culture Conversion, 2012



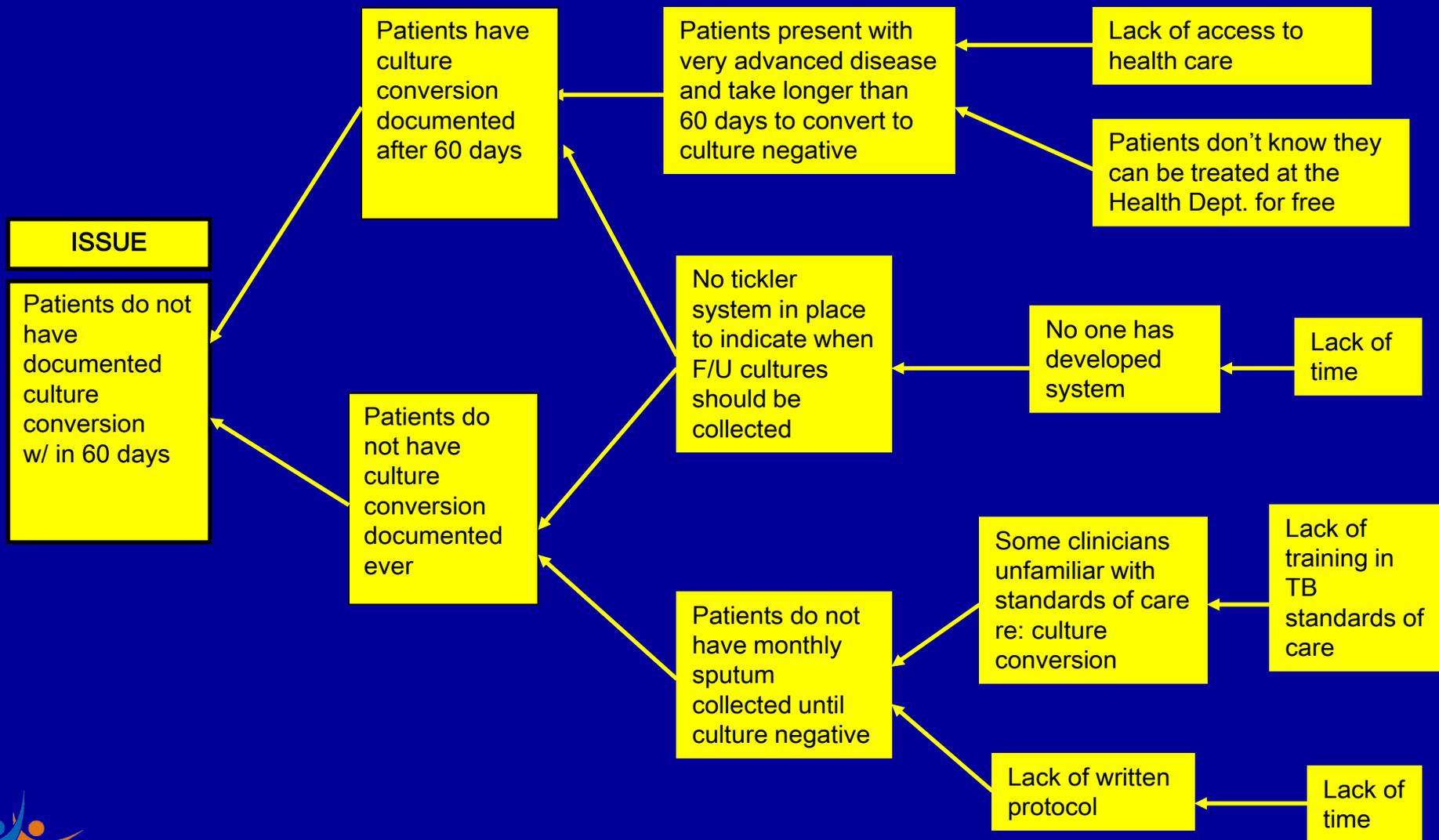
Hmmm. . .  
Lots of missing culture  
conversion results

- Conversion < 60 days
- Conversion > 60 days
- No documented conversion

# Step 2: Planning

- State TIP team and local TIP team select indicator(s) for additional analyses
- Perform chart review or other additional analyses to inform selection of indicator(s) and development of contributing factor diagram
- Select indicator(s) for intervention
- Brainstorm re: possible factors contributing to performance

# Factors Contributing to Lack of Documented Culture Conversion Within 60 Days in Surf County



# Planning (2)

- Prioritize factors contributing to performance on targeted indicator based on impact and amenability to intervention
- Brainstorm proposed solutions
- Prioritize proposed solutions based on impact and feasibility

# Step 3: Action Plan Development



# Surf County: Additional Data Collection Results

- TPAT:
  - Lack of HD protocols for many key areas, including clinic

## Chart reviews:

- Many HD patients lacked monthly sputum collection until culture negative
- Key informant interviews:
  - No system to hold field PHNs accountable for collecting information from PMDs

# Surf County Action Plan re: Culture Conversion (EXCERPT)

Objective		Evaluation Plan
By Dec 31, 2014, increase the proportion of culture-positive patients with specimen collection within 60 days after treatment start to 90%.		Compare specimen collection for culture-positive TB patients Jan-June 2014 vs. July-Dec 2014
Activity		
Activity	Who	By When?
When patients are 2 months into Rx, PHN to present info re: CC at weekly case management meeting	PHN's	Begin 7/1/14

## **Step 4:**

# **Action Plan Implementation**

- Complete action steps
- Measure and communicate progress

## **Step 5:**

# **Evaluation and Reassessment**

- Review progress at mutually agreed upon intervals
- Select new indicator(s) to target when cycle repeats

# TIP is Highly Adaptable

TIP can be used by a wide variety of LHDs with varying resources, capacity, and organizational structures



# TIP is Highly Adaptable (2)

By modifying the indicator unit of analysis, LHDs can use TIP to improve:

- TB control for specific patient populations
- The quality of care provided by specific:
  - Institutions
  - Clinicians
  - Public health districts

# Challenges in Using Indicator Data

- Can't see the whole picture
- Don't measure everything
- Don't tell us why
- Not "real time"
- Problems suggested may not really exist

# Preliminary Successes

TIP is empowering California to use data to improve program performance

TIP has also led to improvements in:

- Skills and capacity of state and local staff
- Communication
- Data quality
- Ability to use data to advocate for additional resources
- TB care processes

# TIP Outcomes

- From TIP's inception in December 2000 to present, 12 LHDs have 24 action plans with long-term outcome data
- 20 of 24 action plans were associated with improved indicator performance following TIP implementation (range of increase = 2.4% to 636%)
- Most LHDs interviewed have reported great satisfaction with their participation in the process and outcomes received to date

# TIP Outcomes Summary

Indicator	# of LHDs Targeting Indicator	Average Performance Change <sup>1</sup>
Contacts Completing LTBI Treatment	3	- 24%
Contact Identification	3	- 1%
Culture Conversion	6	+ 10%
Timely Completion of Therapy	4	+ 10%
Timely Reporting	4	+ 11%
Complete Reporting	1	+ 19%
Contact Evaluation	6	+ 25%
Inappropriate SAT	3	+ 33%
Contacts Starting LTBI Treatment	2	+ 39%
Pediatric TB	3	+ 79%
Appropriate DOT	5	+ 187%

# LHD Assessment of TIP

## Methods

In the 12 jurisdictions where long-term TIP outcome data are available, structured interviews were conducted by TBCB staff with LHD key informants

## Results

On a scale of 1 (low) to 5 (high), TIP participants reported:

- Average satisfaction with results: 4.2
- Average contribution of TIP to results: 3.4

# Limitations of Outcome Assessment

- Although improved indicator performance is temporally associated with TIP interventions, causal attribution cannot be made
- Other factors impacting performance were not systematically evaluated
- Key informant interview results may show reporting bias. TBCB staff performed the interviews - LHD staff may not have shared feedback that may be perceived as negative

# TIP Data for Advocacy

Local TB programs have used data for advocacy:

## 1) Infrastructure assessment information

- Used to identify program strengths and limitations, as compared to standards

## 2) Quantitative report

- Used to support continued use of TB-dedicated staff by showing positive indicator outcomes
- Used to prevent funding cuts by identifying cost savings with TB-dedicated staffing structure vs. alternate program structure

# Web-Based Indicator Reports

- Secure system access ([www.tbdata.ca.gov](http://www.tbdata.ca.gov))
  - Access to California-wide TIP reports for all users
  - For TIP participants, access to individual county reports
- System always available
- Tailored reports
  - By year
  - By indicator
- Data updated several times per year

# Want More Information?

<p>General questions about TIP and TIP implementation</p>	<p>Anne Cass, MPH TIP Coordinator (619) 688-0253 <a href="mailto:anne.cass@cdph.ca.gov">anne.cass@cdph.ca.gov</a></p>
<p>Want to see the on-line TIP reports?</p>	<p>Melissa Ehman, MPH Lead TIP Epidemiologist (510) 620-3039 <a href="mailto:melissa.ehman@cdph.ca.gov">melissa.ehman@cdph.ca.gov</a></p>