

Tuberculosis Indicators Project (TIP) Overview

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“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*

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?

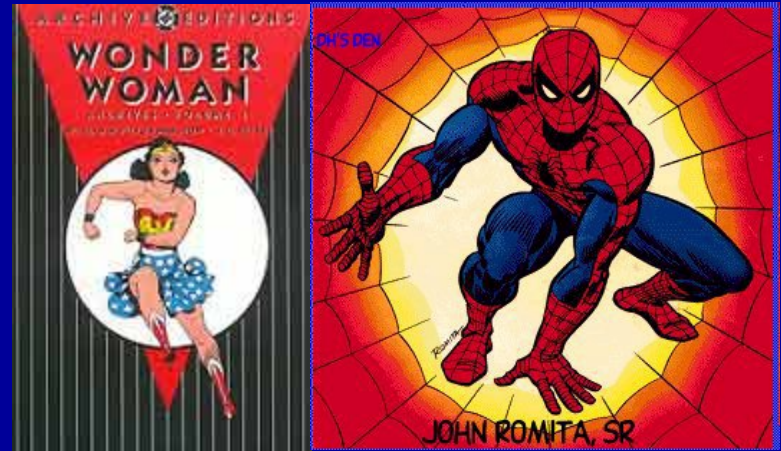
TB Indicators Project (TIP) Components

- Formal process for using indicators to evaluate and improve program performance
- Partnership between the state TBCB and 16 of 61 local TB programs that contribute ~ 90% of CA's TB morbidity

TIP History

1999	TBCB TIP planning workgroup formed
Early 2000	TIP-TAC stakeholder group convened
Late 2000	Implementation of first TIP cycle
2002	TIP-TAC stakeholder group re-convened
2003	Discussions began regarding CDC's N-TIP project (based upon California TIP model)
2005	First assessment of long-term outcomes

TIP Technical Advisory Committee



- Stakeholders involved early and often
- We ensured clear roles
- We supported their participation

How Did We Create Indicators?

- Defined goal areas
- Reviewed standards
- Identified available data sources
- Developed indicators and explicit methods for calculations
- Selected indicators according to set criteria
- Set objectives

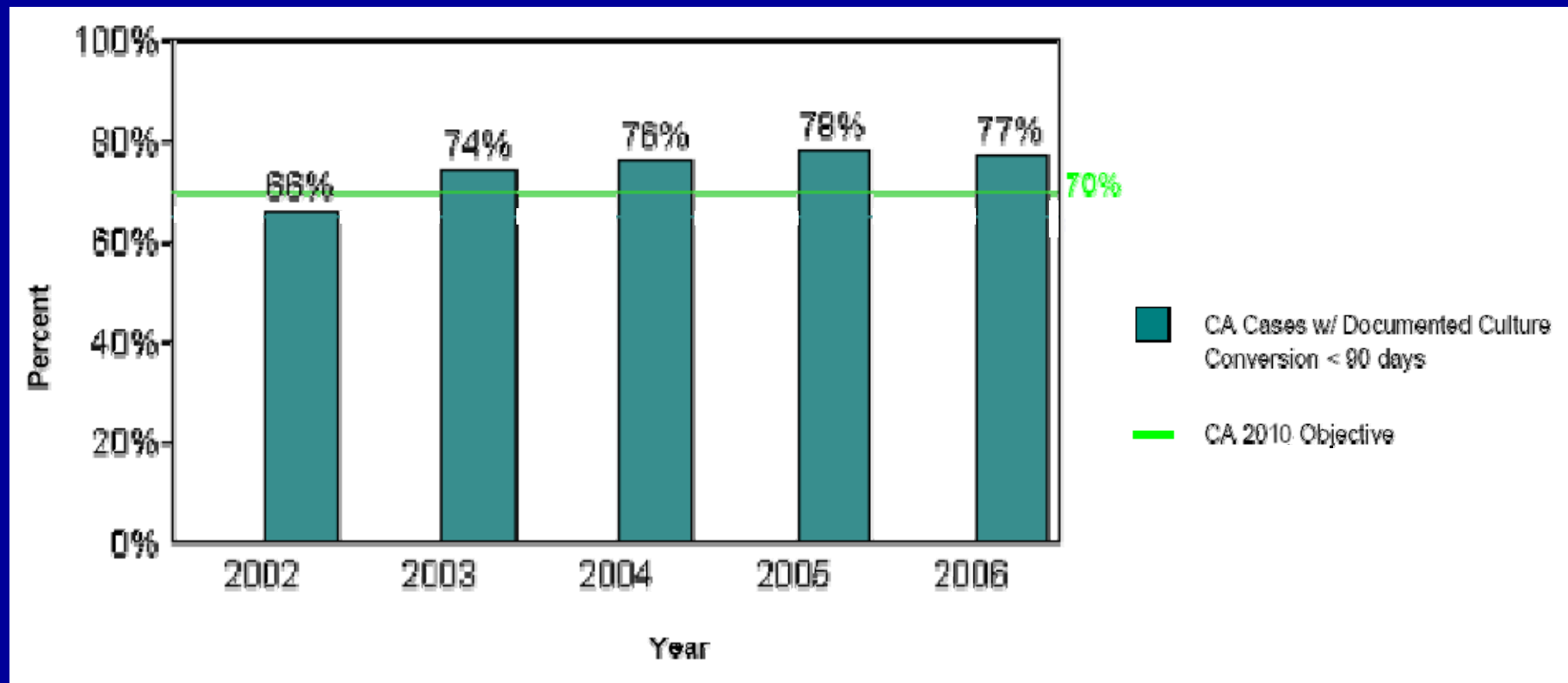
Indicator Criteria

- Ethical
- Useful
- Representative
- Understandable
- Data Accessible
- Robust (Valid)
- Reliable

Culture Conversion Methods Excerpt

- Goal: Ensure timely completion of appropriate therapy for all persons with tuberculosis
- Indicator: Proportion of sputum culture-positive TB cases with documented conversion to sputum culture-negative within 90 days of initiation of treatment
- Objective: At least 70% of sputum culture-positive TB cases will have documented conversion to sputum culture-negative within 90 days of initiation of treatment, for cases counted in 2006

Culture Conversion California TIP Indicator Report



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

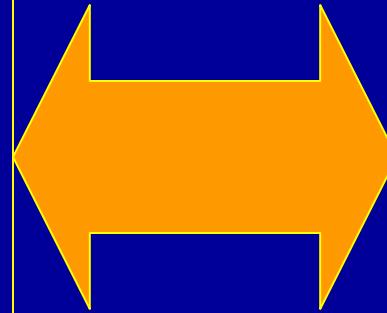
- Program Capacity (self-assessment)

How Has TIP Changed the Way We Use Data?

- Systematic and comprehensive assessment of local program performance data
- Greater detail in specific areas of data analysis
- More proactive use of data
 - To prioritize and plan interventions
 - To identify successful TB control intervention models for replication

STATE TIP TEAM

Program Liaison
Epidemiologist
Fiscal Analyst



LOCAL TIP TEAM

TB Controller
Program Manager
Epidemiologist
Staff

STATE RESPONSIBILITIES

Provide LHDs with indicator reports and program, epidemiologic, and fiscal 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

- Complete Infrastructure Self-Assessment
- Review indicator data

2. Analyze and plan

- Verify problem
- Determine reasons for problem

3. Develop interventions

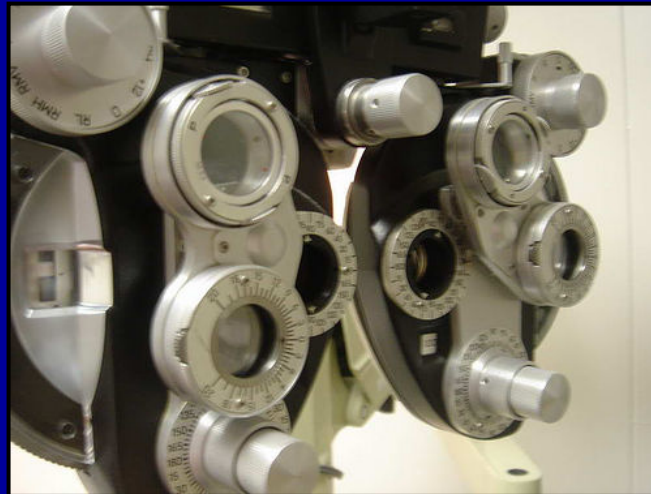
4. Implement interventions

5. Evaluate and reassess



Step 1 = The Initial Assessment

- Complete Infrastructure Self-Assessment
- Preliminary review of indicator results



Infrastructure

Self-Assessment Checklist

- Enables LHD TB Programs to conduct formal, systematic assessments of core components of their infrastructure
- Provides a mechanism for LHD TB Program staff to compare their program to infrastructure standards
- Based mainly upon CDC's "Essential Components of a TB Prevention and Control Program" document (1995)

Infrastructure Self-Assessment Tool Components

STANDARD 5. CONSULTATION, OVERSIGHT AND EDUCATION

The TB program provides consultation and oversight for local health care facilities and practitioners.

The TB program provides appropriate education to program staff, private providers and community members.

		Never or No	Almost Never or Mostly Not	Sometimes or Somewhat	Almost Always or Mostly	Always or Yes
1	Our program provides consultation, education and oversight for agencies, groups, facilities and practitioners to assure their efforts reflect local, state, and national guidelines.					

Tuberculosis Indicators Project (TIP) Indicator A1 Self Assessment Tool

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1	Our program provides consultation, education and oversight for agencies, groups, facilities and practitioners to assure their efforts reflect local, state, and national guidelines.					
2	Our program provides medical consultation to advise local health care providers on medical management problems (e.g., monitoring treatment adherence, toxicity, MDR-TB).					
3	Our program works with hospitals in our jurisdiction to discuss discharge planning and to ensure that Gotch laws are carried out and enforced.					
4	Our program has a system in place to work with the correctional facilities located in our local health jurisdiction in the management and care of patients diagnosed with active TB. We work with: <ul style="list-style-type: none"> • County jails • State prisons • Federal prisons 					

Revised 4-4-08 15

Using Infrastructure Self-Assessment Results

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

SURF COUNTY *Indicators at a Glance*

INDICATOR	YEAR	SURF COUNTY DATA	CALIFORNIA DATA	%(n) of CA	CA 2010 OBJECTIVES	NATIONAL OBJECTIVES
GOAL B: Ensure early identification and reporting of all persons with tuberculosis.						
B1: TB Case Rate	2007	10.6	8.9	2.1% (66)	6.0	1.0
B2: Timely Reporting	2007	35%	86%	1.6% (7)	88%	N/A
B3: Complete Reporting	2007	<u>KEY VARIABLES:</u> Homeless: 100% IDU: 100% Non IDU: 100% Alcohol: 100%	<u>KEY VARIABLES:</u> Homeless: 99% IDU: 97% Non IDU: 97% Alcohol: 97%	0% (0)	95%	95%
B4: Culture Identification	2007	95%	95%	2.8% (3)	97%	N/A
GOAL C: Ensure timely completion of appropriate therapy for all persons with tuberculosis.						
C1: Recommended Initial Therapy	2007	<15 yo: 89% =>15 yo: 66%	<15 yo: 79% ≥15 yo: 91%	0% (0) 2.4% (6)	70% 93%	N/A
C2: Timely Treatment	2007	95%	90%	1.8% (2)	95%	N/A
C3: Culture Conversion	2006	52%	63%	0.9% (6)	70%	N/A
C4-A: Appropriate DOT	2006	30%	64%	2.6% (13)	75%	N/A
C4-B: Inappropriate SAT	2006	65%	13%	5.8% (11)	N/A	N/A

SURF COUNTY - Indicators at a Glance (excerpt)

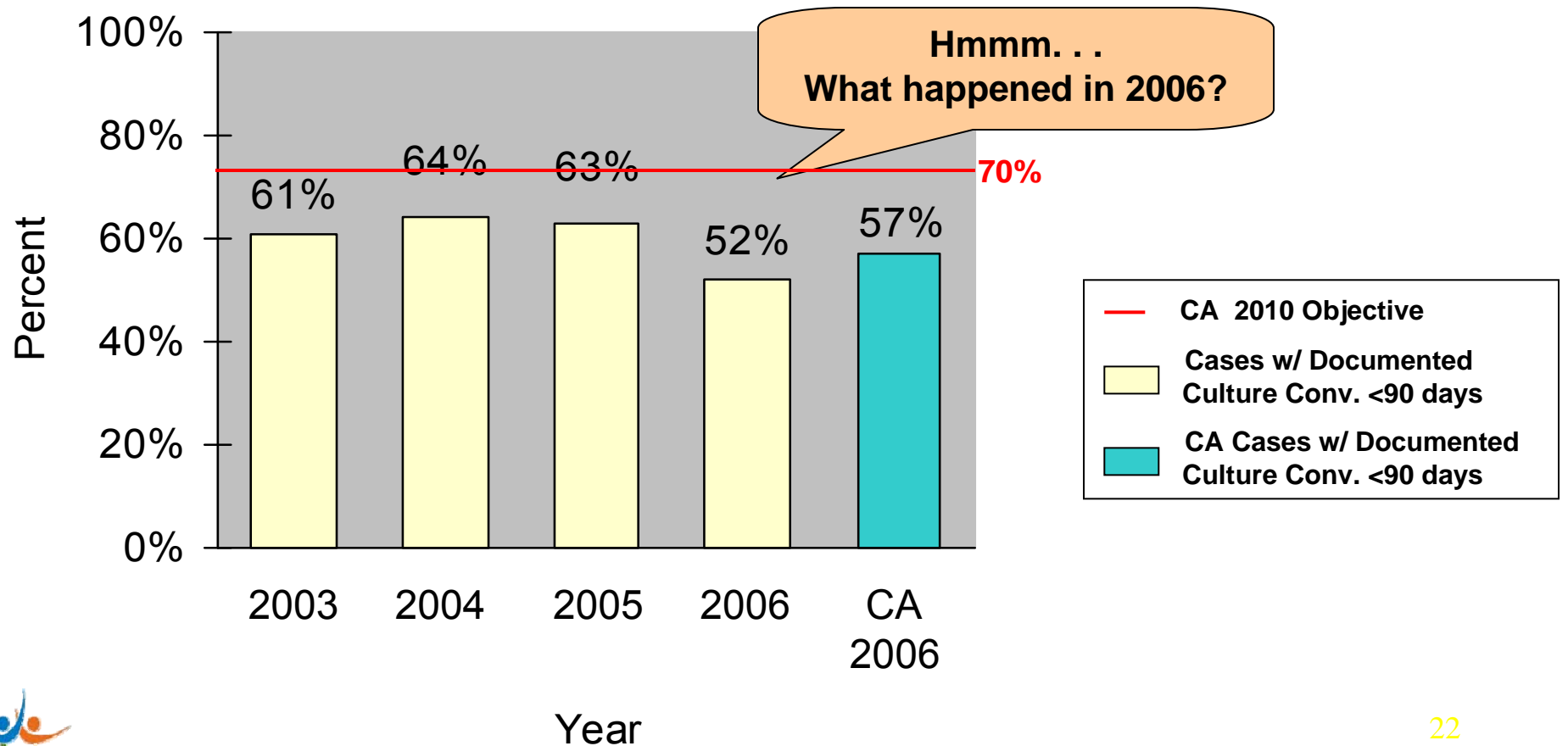
Indicator	Year	Surf Co. Data	CA Data	% (n) of CA	CA 2010 Obj.
GOAL C: Ensure timely completion of appropriate therapy for all persons with tuberculosis.					
Recommended Initial Therapy	2007	89%	79%	3.2% (4)	70%
Timely Treatment	2007	95%	90%	1.8% (2)	95%
Culture Conversion	2006	52%	63%	0.9% (6)	70%

SURF COUNTY - Indicators at a Glance

Indicator	Year	SC Data	CA Data	% (n) of CA	CA 2010	US
GOAL C (cont.): Ensure timely completion of appropriate therapy for all persons with Tuberculosis.						
Timely Completion of therapy	2006	77%	69%	1.1% (11)	85%	90%
Not Defaulting from Treatment	2006	100%	98%	0% (0)	98%	N/A
Goal D: Ensure contacts to a person with infectious TB are promptly identified, examined, and if appropriate, complete treatment for latent TB infection.						
Contact Identification	2006	100%	87%	0% (0)	90%	90%
Contact Evaluation	2006	88%	84%	0.9% (19)	95%	95%
Contact Treatment Initiation	2006	91%	70%	0.7% (10)	80%	N/A
Contact Treatment Completion	2005	96%	64%	0.1% (2)	75%	85%
GOAL SE: Reduce the occurrence of sentinel events.						
Pediatric TB Cases	2007	2%	3%	1% (2)	N/A	N/A
TB Deaths	2007	4%	8%	1.5% (4)	8% ₂	N/A

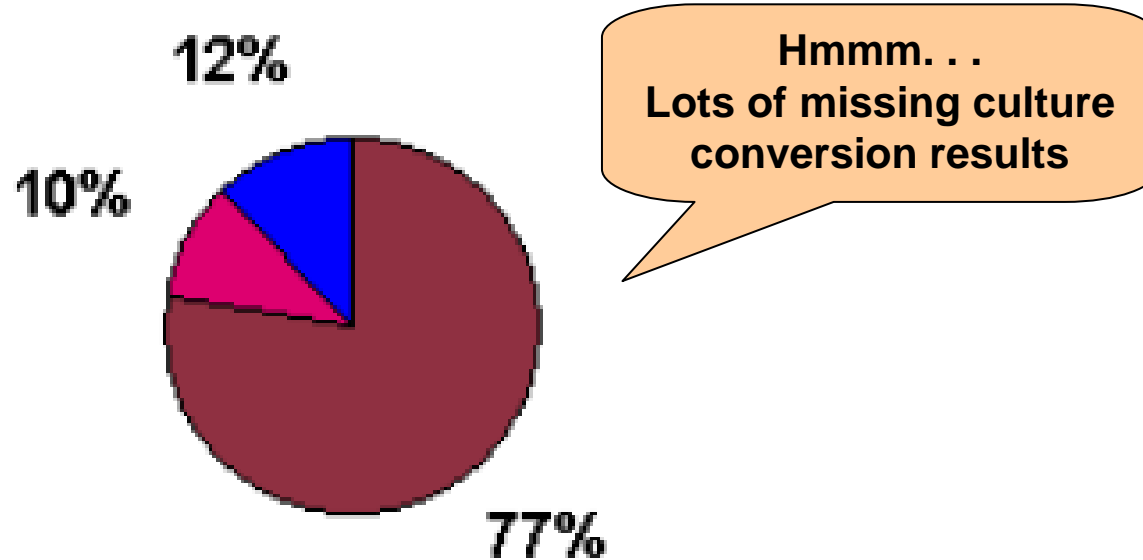
Surf County Culture Conversion Indicator Results

Performance Trends in Culture Conversion;
California Objectives



Surf County Culture Conversion Stratification

Documented Culture Conversion, 2006



- Conversion < 90 days
- Conversion > 90 days
- No documented conversion

Step 2 = Analyze and Plan

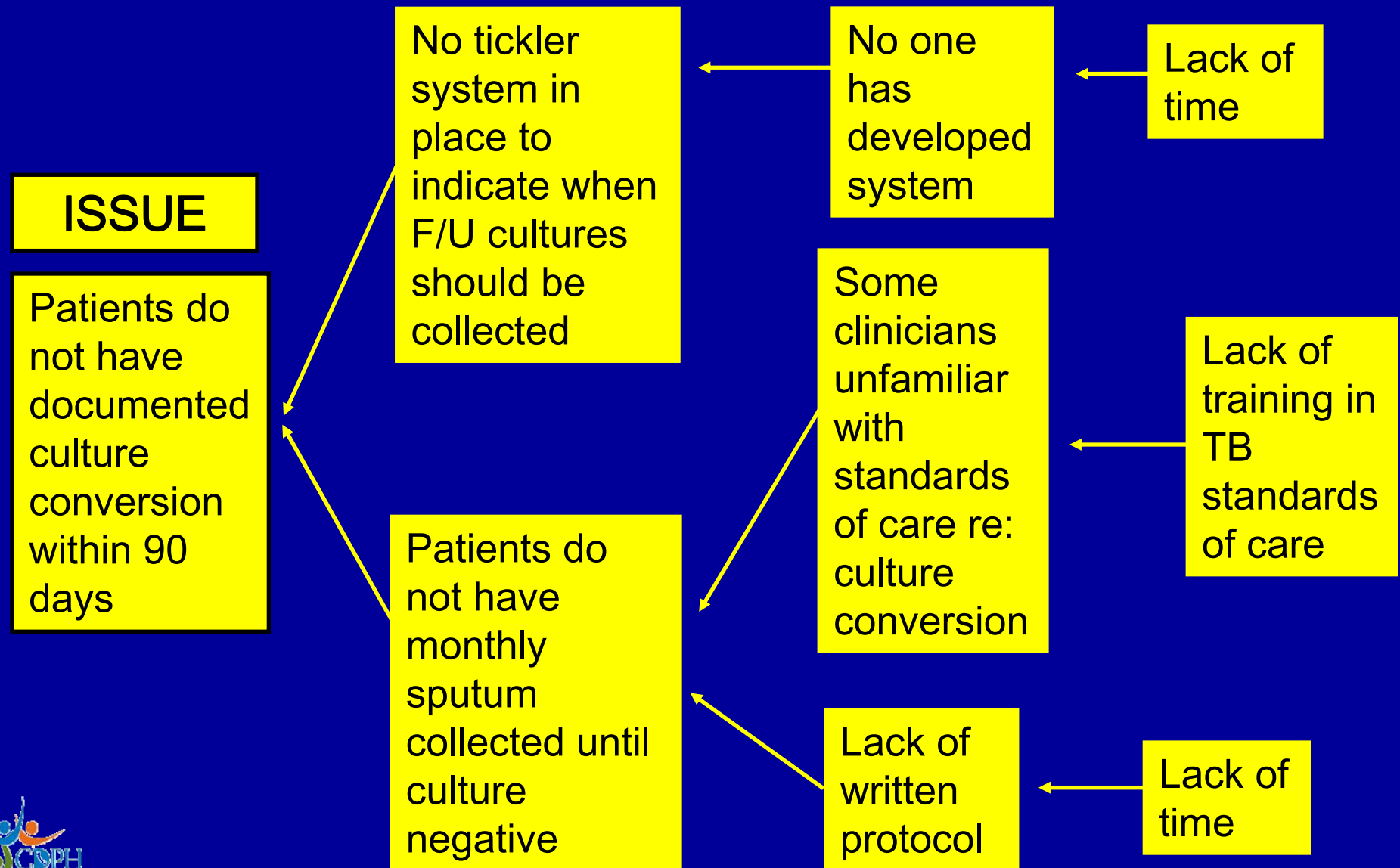
- Verify problem
- Determine reasons for problem



Step 2 = Analyze and Plan

- State TIP team and local TIP team meet to review and discuss Indicator Report
- 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 90 Days in Surf County



Step 3 = Develop Interventions

- Create Action Plan



Step 3 = Develop Interventions

- Review results of additional data collected in response to specific indicator
- Prioritize contributing factors
 - Identify factors contributing to current performance
 - Determine which contributing factors are amenable to intervention
- Develop interventions
- Set local objectives, determine action steps

Surf County: Additional Data Collection Results

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

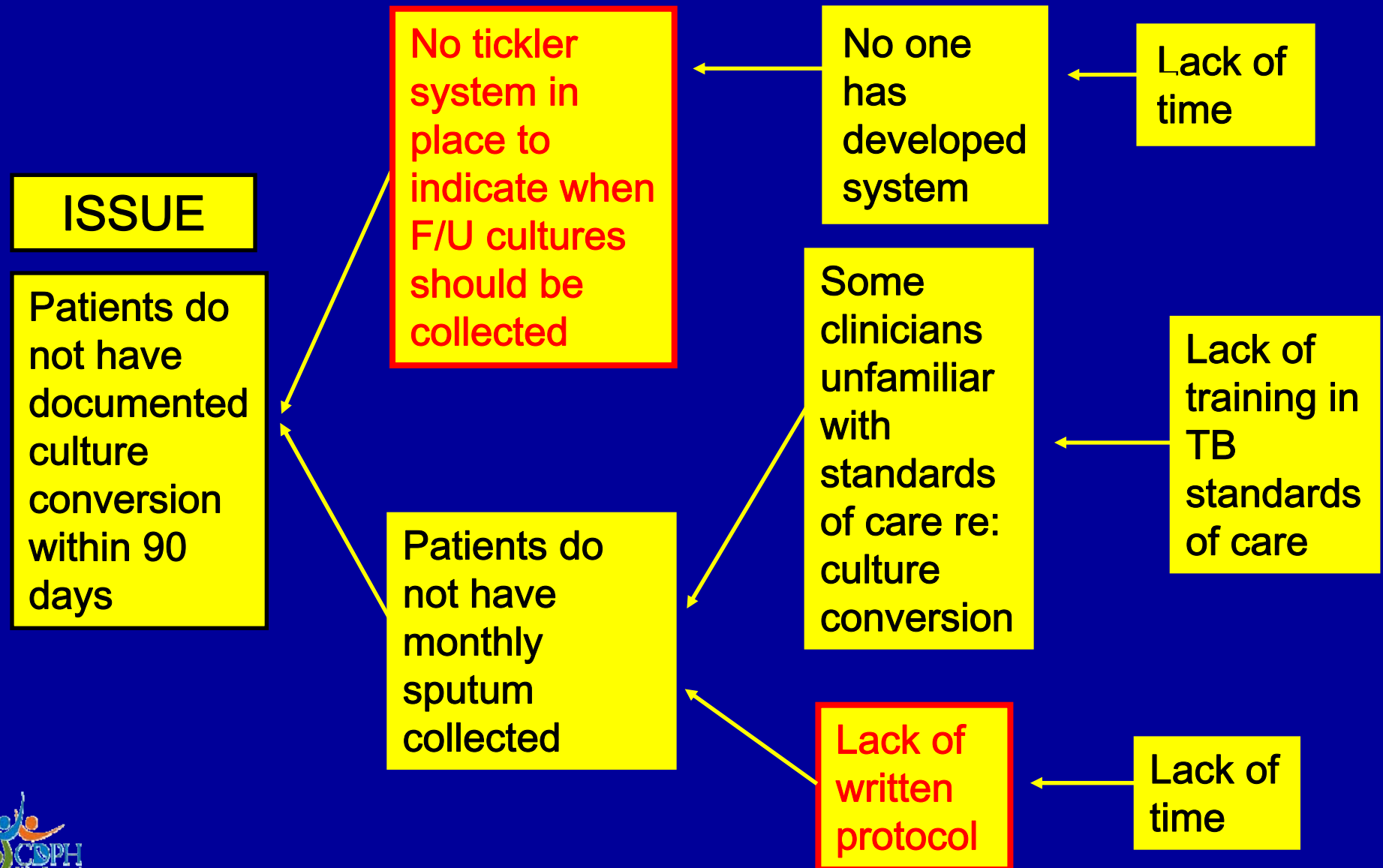
Chart reviews:

- 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: Prioritize Contributing Factors

- Identify factors contributing to current performance
- Determine which contributing factors are amenable to intervention

Factors Contributing to Lack of Documented Culture Conversion Within 90 Days in Surf County



Surf County Action Plan re: Culture Conversion (EXCERPT)

Objective		Evaluation Plan
By Dec 31, 2007, all field PHNs will incorporate timely documentation of sputum culture conversion (CC) into their case management activities.		Compare documentation of CC: 2006 vs. 2007.
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 7/1/07

Step 4 = Implement Interventions

- Complete action steps
- Measure and communicate progress

Step 5 = Evaluate and Reassess

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

TIP Outcomes

- From TIP's inception in December 2000 to present, 12 LHDs have 21 action plans with long-term outcome data
- 17 of 21 action plans were associated with improved indicator performance following TIP implementation (range of increase = 4% to 214%)
- Three action plans showed a post-TIP performance decrease (range = 3% to 33%)

TIP Outcomes Summary

Indicator	# of LHDs Targeting Indicator	Average Performance Change
Contacts Completing TB Therapy	1	- 3%
Recommended Initial Therapy	1	0%
Timely Reporting	2	+ 9%
Complete Reporting	1	+ 12%
Timely Completion of Therapy	3	+ 13%
Pediatric TB	3	+ 14%
Contact Evaluation	3	+ 16%
Culture Conversion	3	+ 23%
Inappropriate SAT	1	+ 68%
Appropriate DOT	3	+ 128%

LHD Assessment of TIP

Methods

In 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: 3.6

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

Next Steps in Outcome Assessment

- Compare performance change in LHDs targeting a specific indicator for intervention vs. LHDs not targeting that indicator
- Include other factors impacting performance in analysis
- Investigate possible ripple effects on program performance – does work on one indicator improve performance on others?

TIP Benefits and Challenges

- Improvements in many key areas
 - Program performance
 - Staff capacity and communication
 - Data quality
 - TB patient care processes
- Challenges
 - Limitations with using TIP indicator data
 - Competing priorities for LHD and TBCB staff

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 alternate program structure

Web-Based Indicator Reports

- Secure system access (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

EXERCISE

Using Indicators for Program Improvement

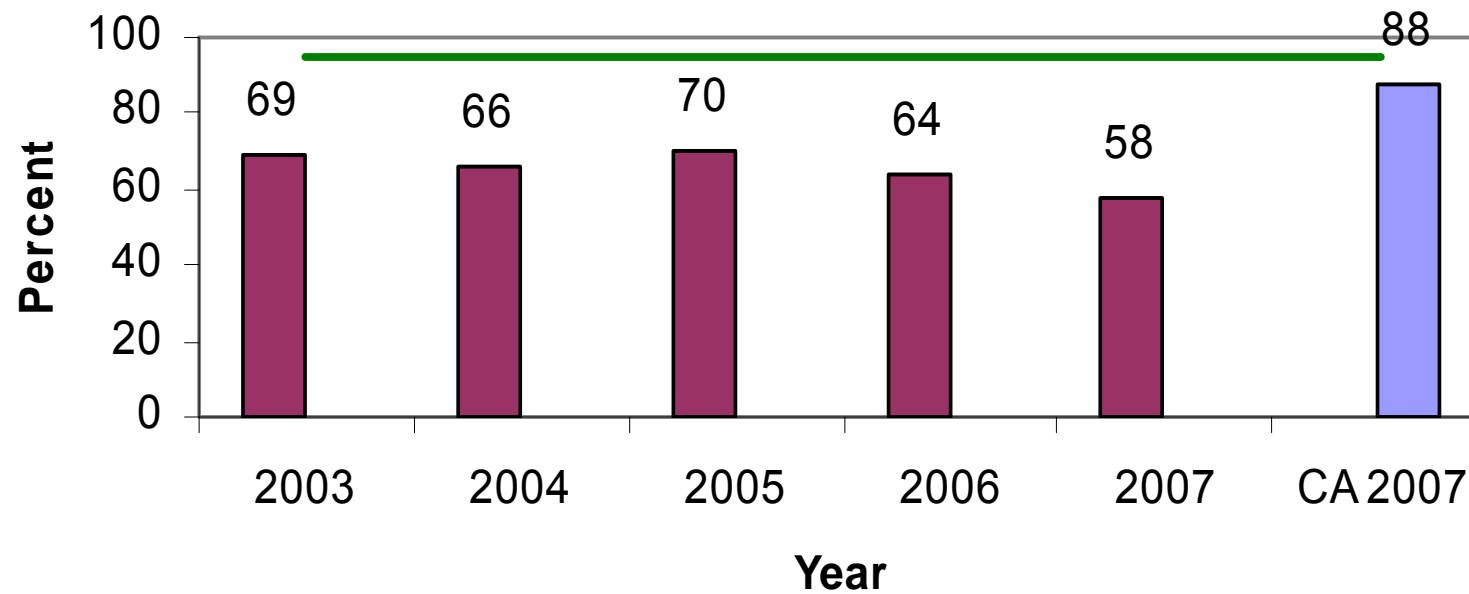
Background

- You are the Surf County Health Officer
- Your TB program is participating in TIP
- Your local program has met with the State TIP team and has done an in-depth review of Surf County's TIP data
- You and your staff are most concerned about the program's performance on the "Timely Treatment" indicator

TIP Timely Treatment Indicator

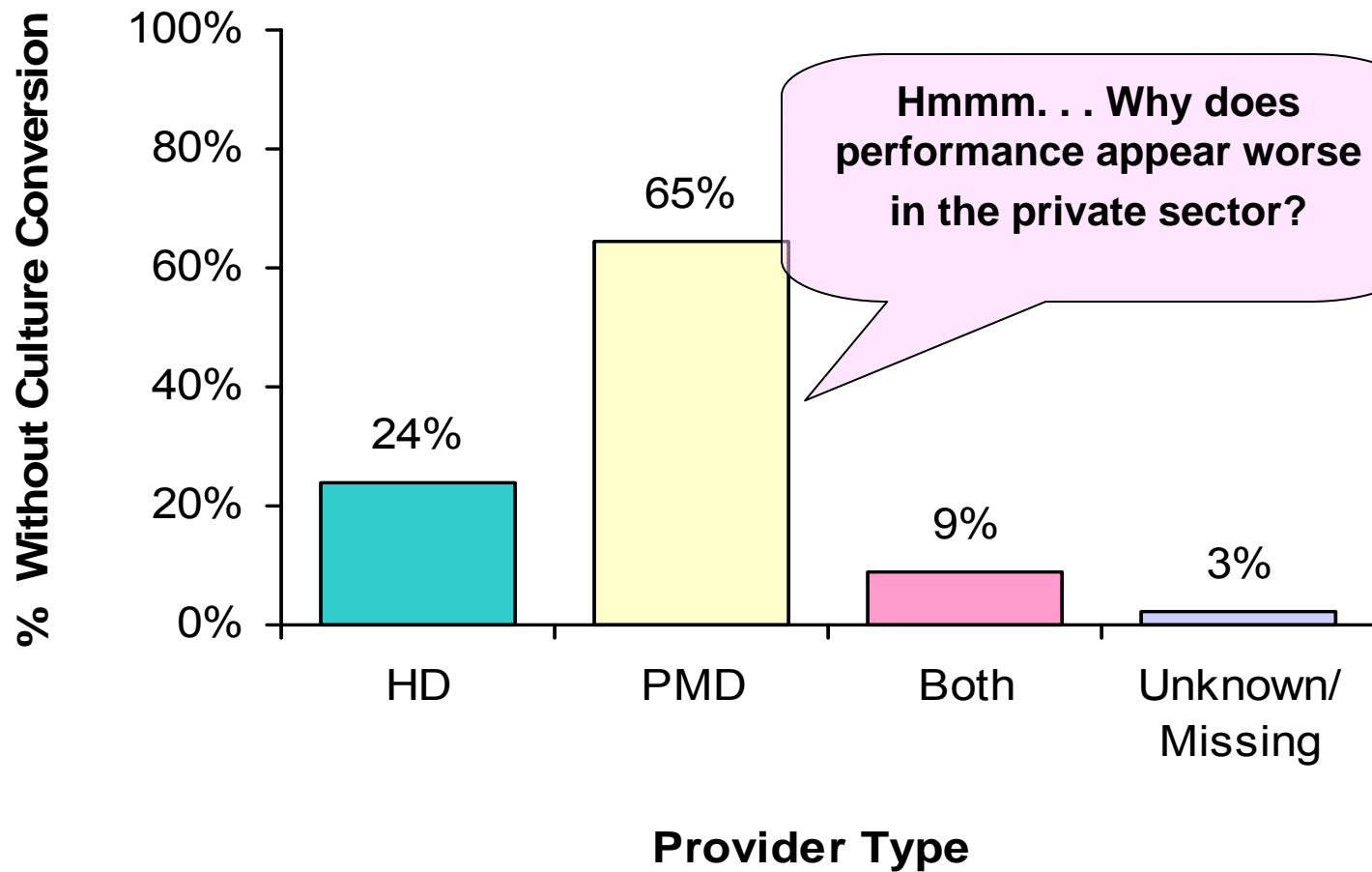
- At least 95% of infectious TB cases will initiate treatment within 7 days of identification
- Rationale: delays in initiating therapy may result in TB transmission and poor treatment outcomes.

Performance Trends in Timely Treatment; California Objectives



- Cases with Timely Treatment
- CA Cases with Timely Treatment
- CA 2010 Objective (95%)

Surf County Cases Without Timely Treatment by Provider Type*



Preparation for Identification of Contributing Factors

- Chart reviews of all 15 patients not started on timely treatment in 2007
 - 12 of 15 patients were treated at the Bayside Community Clinic
- Key informant interviews of TB program staff
 - Bayside Community Clinic has experienced other problems lately:
 - Lots of staff turnover
 - Delayed reports of active TB cases
 - Inappropriate treatment regimens

Contributing Factors

Proposed Solutions

Objective		Evaluation Plan	
Activity	Who	By When?	

Want More Information?

General questions
about TIP and
TIP implementation

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Want to see the on-
line TIP reports?

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Acknowledgements

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