San Francisco TB Control Annual Update

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June 16, 2010

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TB Control Goals

- Find and treat all cases to completion
- Stop transmission
- Prevent TB in those at greatest risk of developing disease

Objectives

- To share the epidemiology of TB and LTBI in San Francisco
- To highlight specific TB control activities
- To share progress made on specific goals and objectives

Why Review Our Data?

- To tailor prevention and control efforts
- To identify areas of program strength and opportunities for improvement
- To ensure activities remain patient centered

San Francisco Demographics

- Population: 814,225 (2009)[1]
- 35.7% foreign born[2]
- 27,000 living with AIDS (2007)[3]
- 6,514 homeless (1,500 in shelter)[4]
  (10.5% HIV+[5], 7% LTBI by QFT-G)
- 18,000+ injection drug users
  (22% HIV+)
- ~55,000 jail bookings each year[6]

[1]State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000–2050. Sacramento, CA, July 2007.

[2]U.S. Census Bureau, 2005-2007 American Community Survey.

[3]San Francisco Department of Public Health, HIV Epidemiology Section, HIV/AIDS Epidemiology Annual Report 2007.

[4]San Francisco Human Services Agency, San Francisco 2009 Homeless Count Final Report.

[5]Robertson MJ, Clark RA, Charlebois ED et al. HIV seroprevalence among homeless and marginally housed adults in San Francisco. Am J Public Health 2004; 94: 1207–1217.

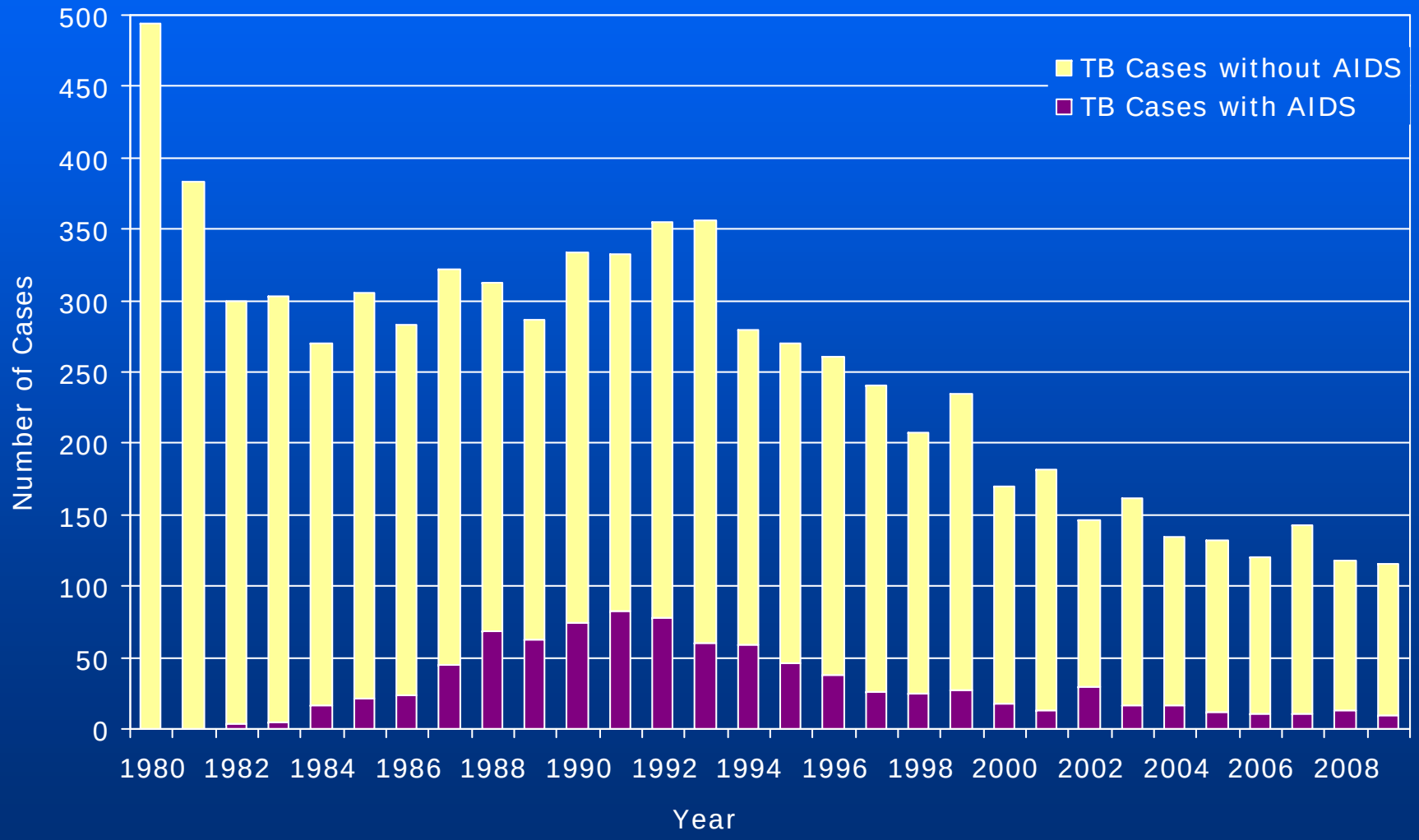
[6]http://www.sfsheriff.com/jails.htm

Epidemiology of Active TB

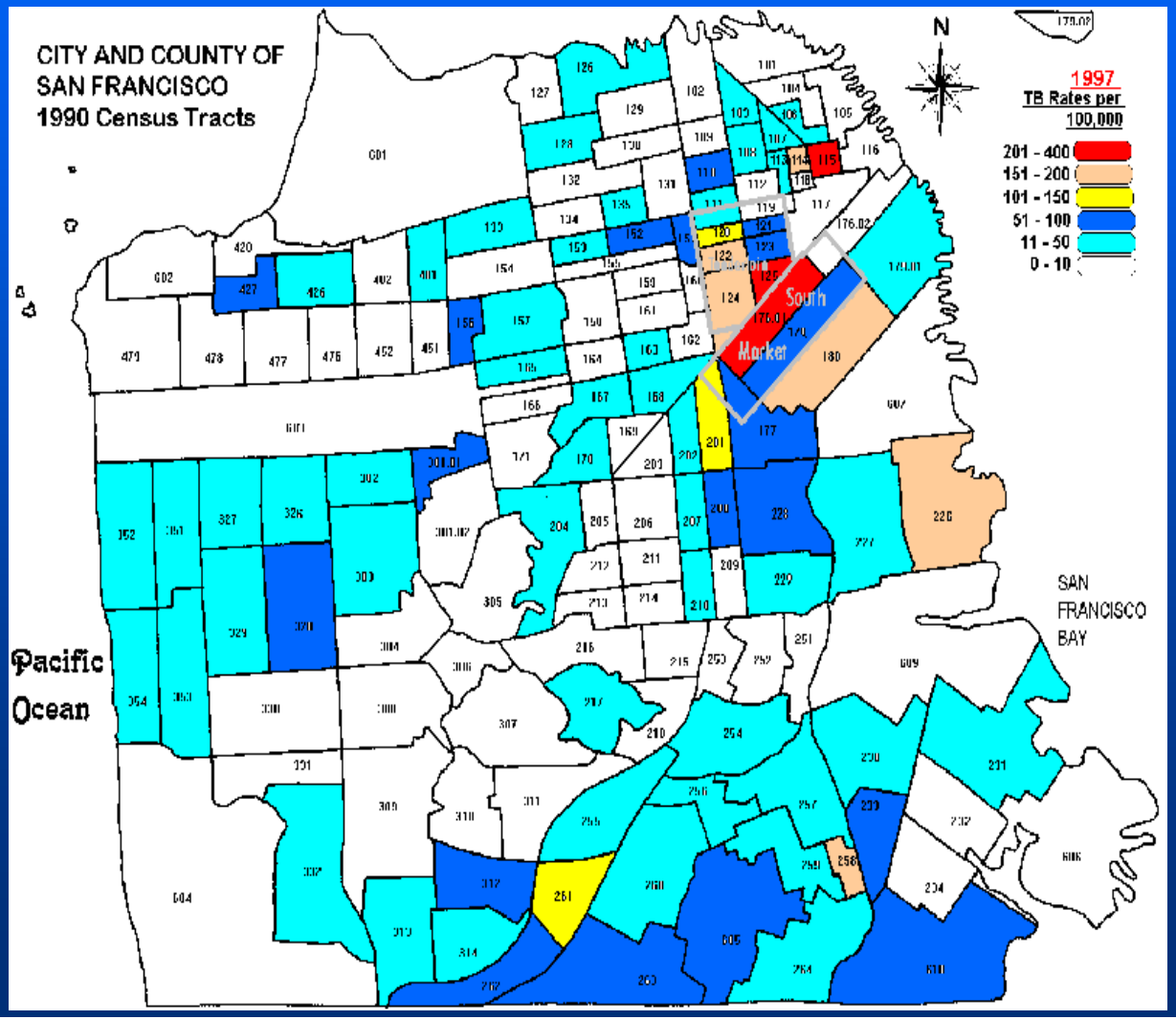
2009 TB Incidence

- 116 new cases reported –
  - 1.7% decrease from 2008
- Incidence rate = 14.2/100,000
- Incidence declined 50% over last decade
- Highest rate of TB in California
  - >2x California rate of 6.4/100,000
  - >3x U.S. rate of 3.8/100,000

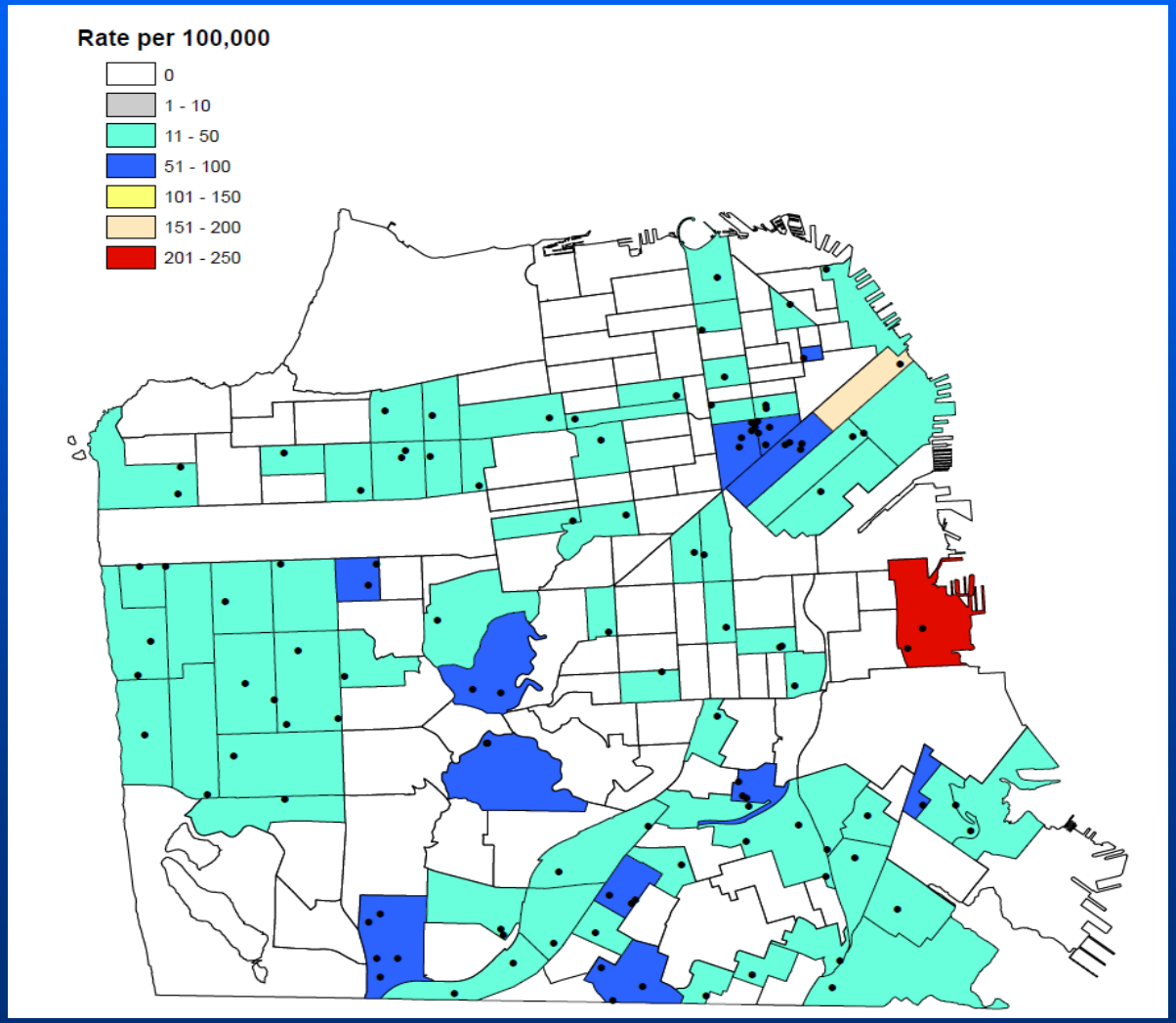
TB Case Counts 1980–2009



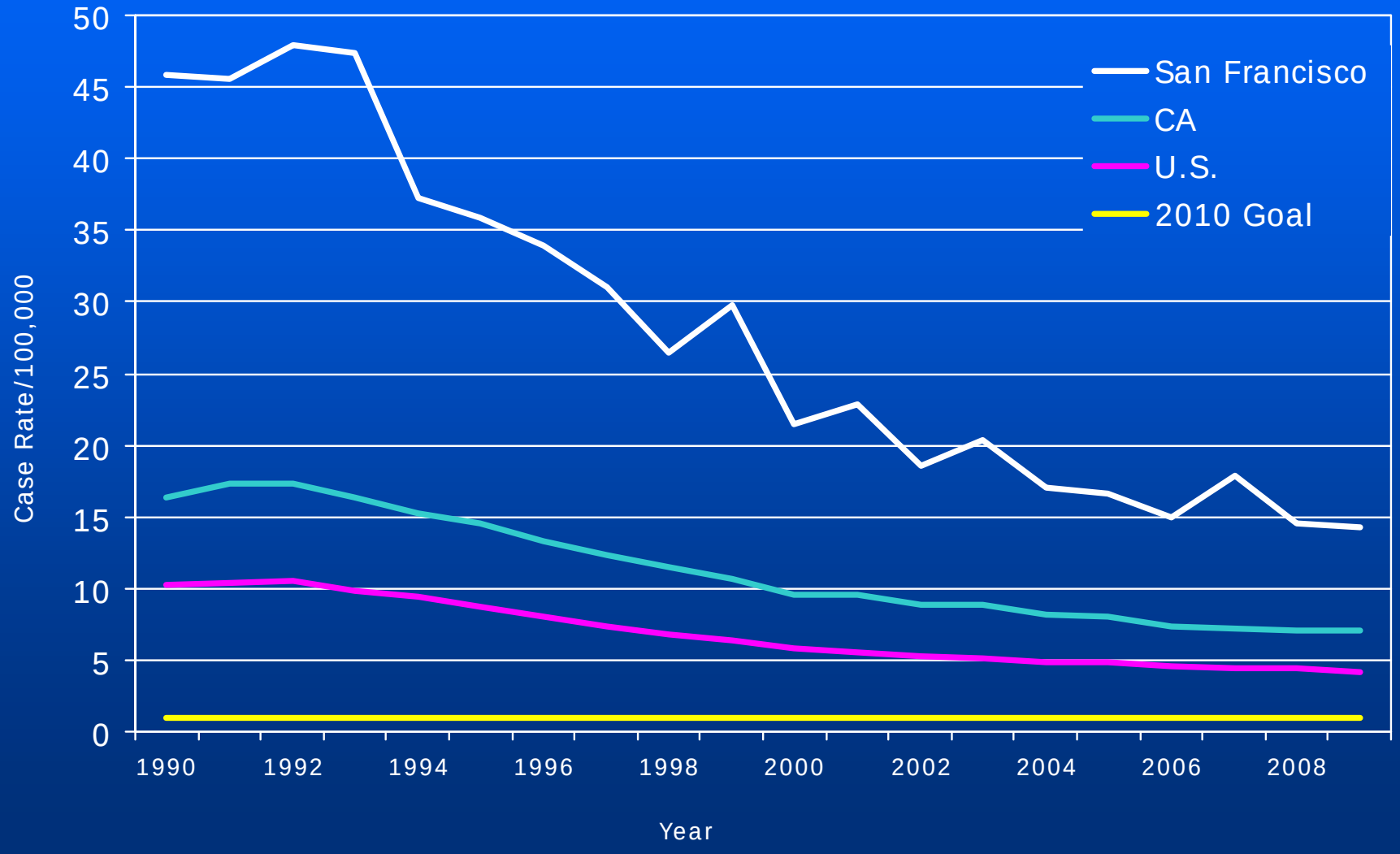
1997 TB Case Rates



2009 TB Case Rates



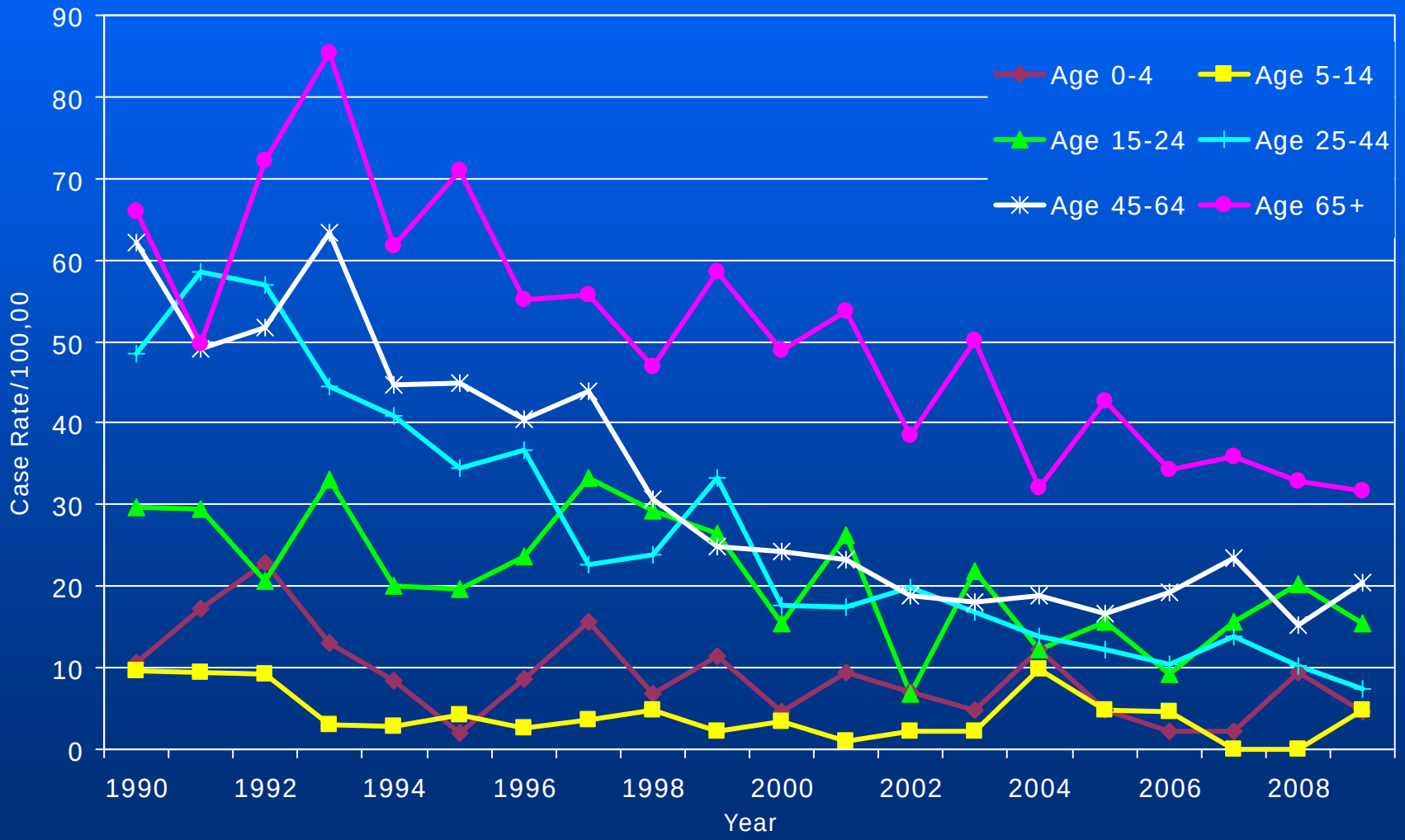
TB Case Rates 1990–2009



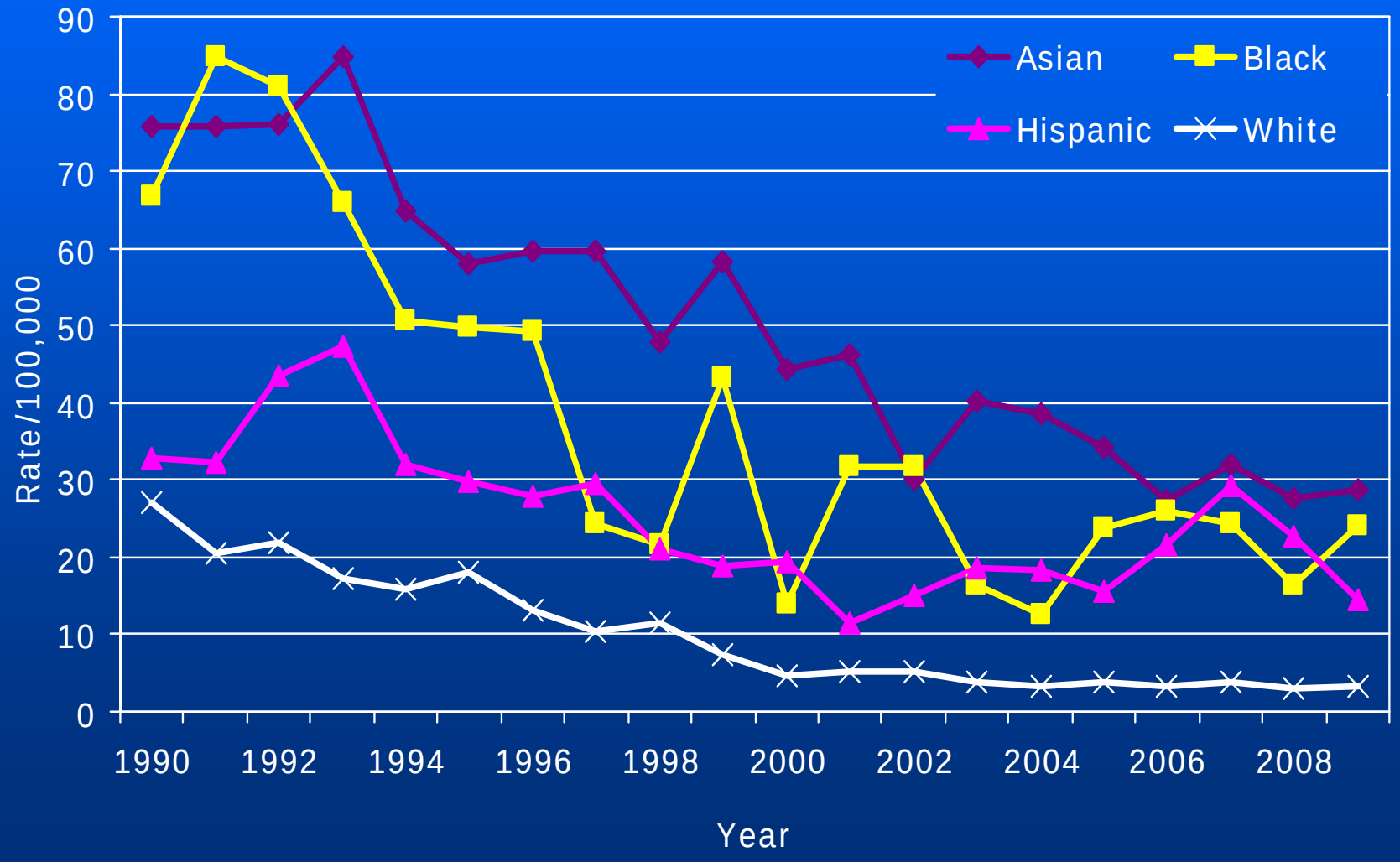
TB Cases 2009: Demographics

- 76% foreign-born
  - Asian and Hispanic cases
  - mostly due to reactivation of old infection
- 30% ethnic Chinese
- 8% HIV+
- U.S.-born cases are disproportionately African-American
  - rate 24.0/100,000 vs. white non-Hispanic rate of 3.3/100,000
- 13% homeless
  - African-American, white non-Hispanic, HIV+
  - tend to be clustered together

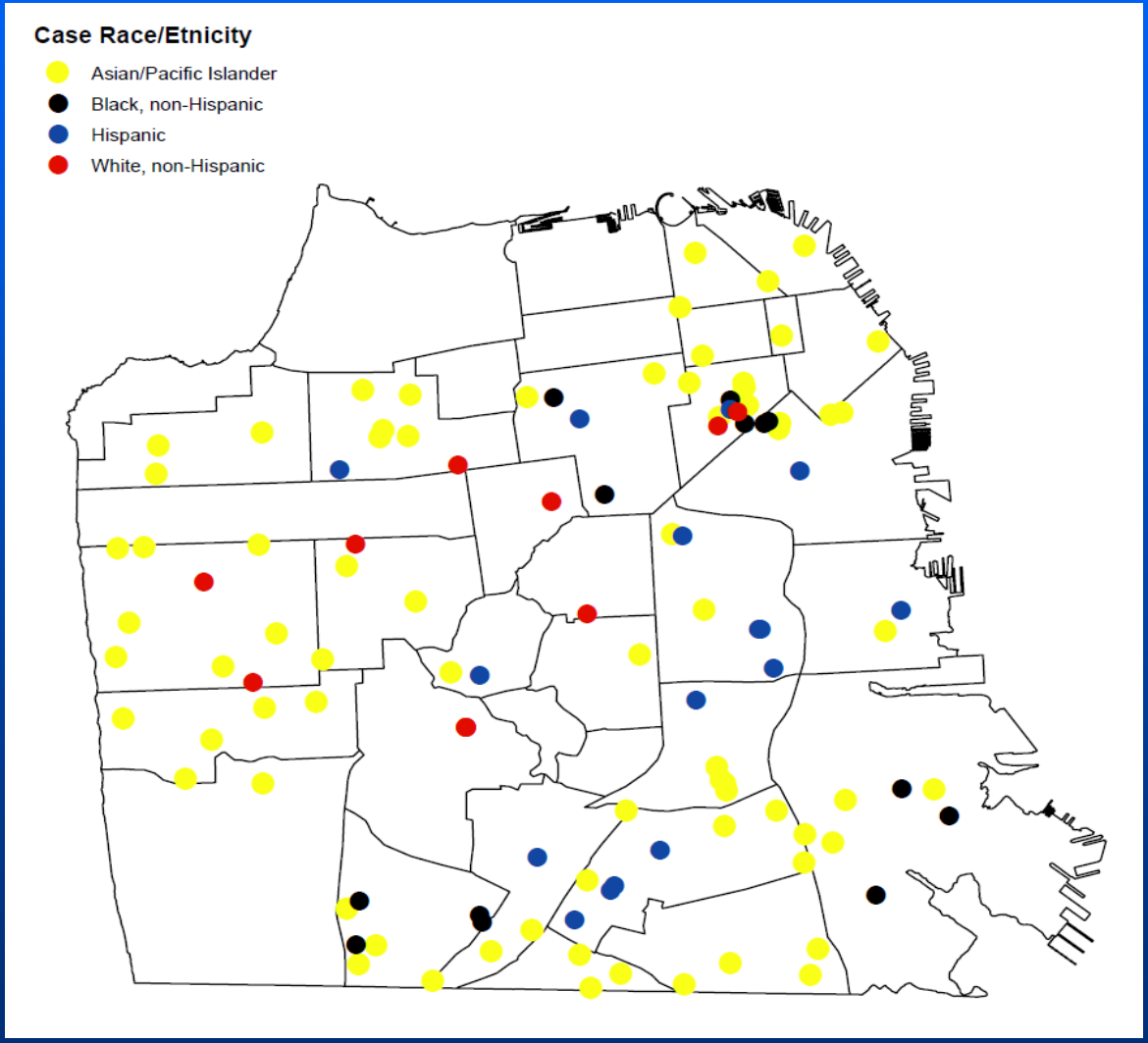
TB Cases 2009: Age Group



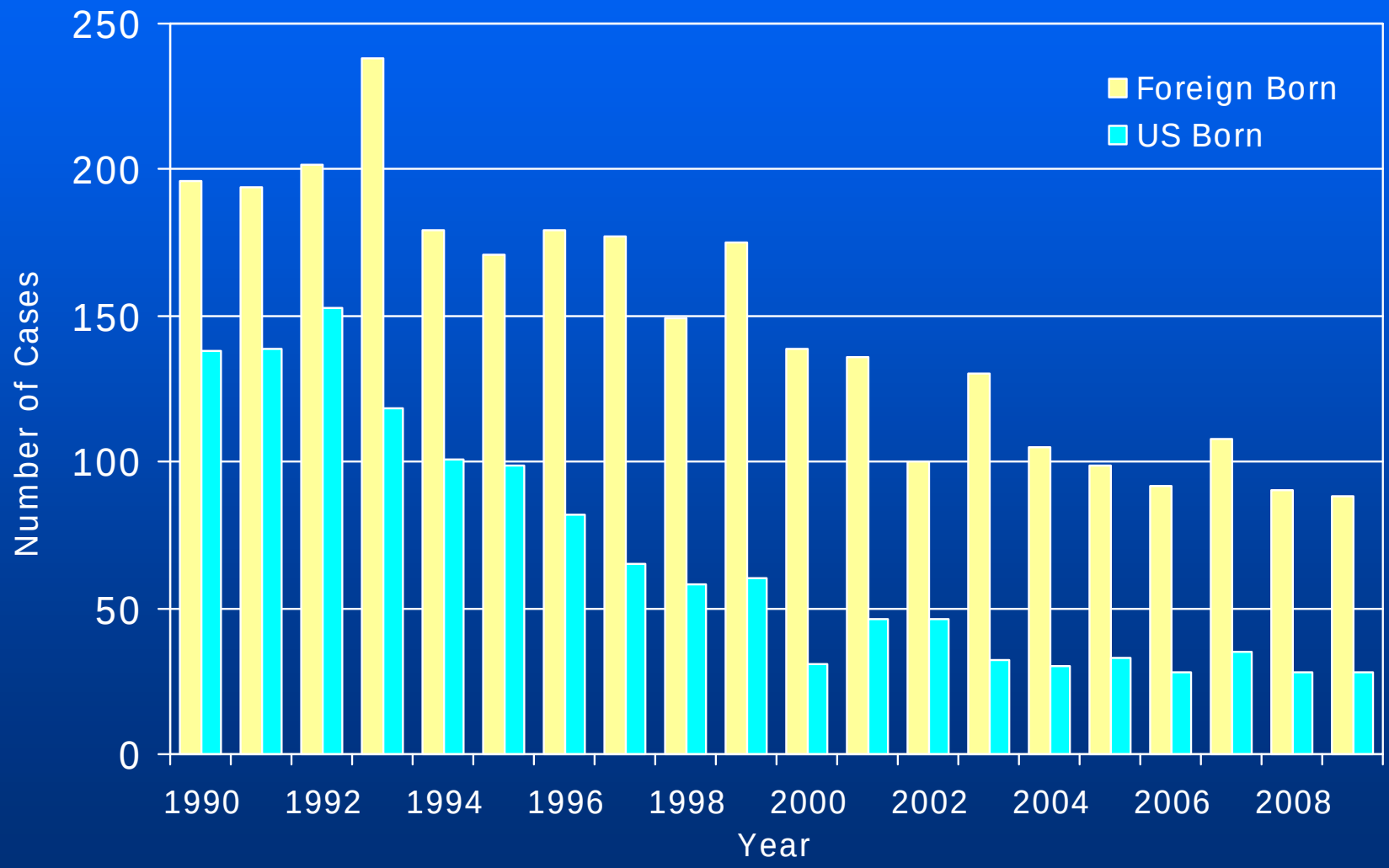
TB Cases 2009: Race/Ethnicity



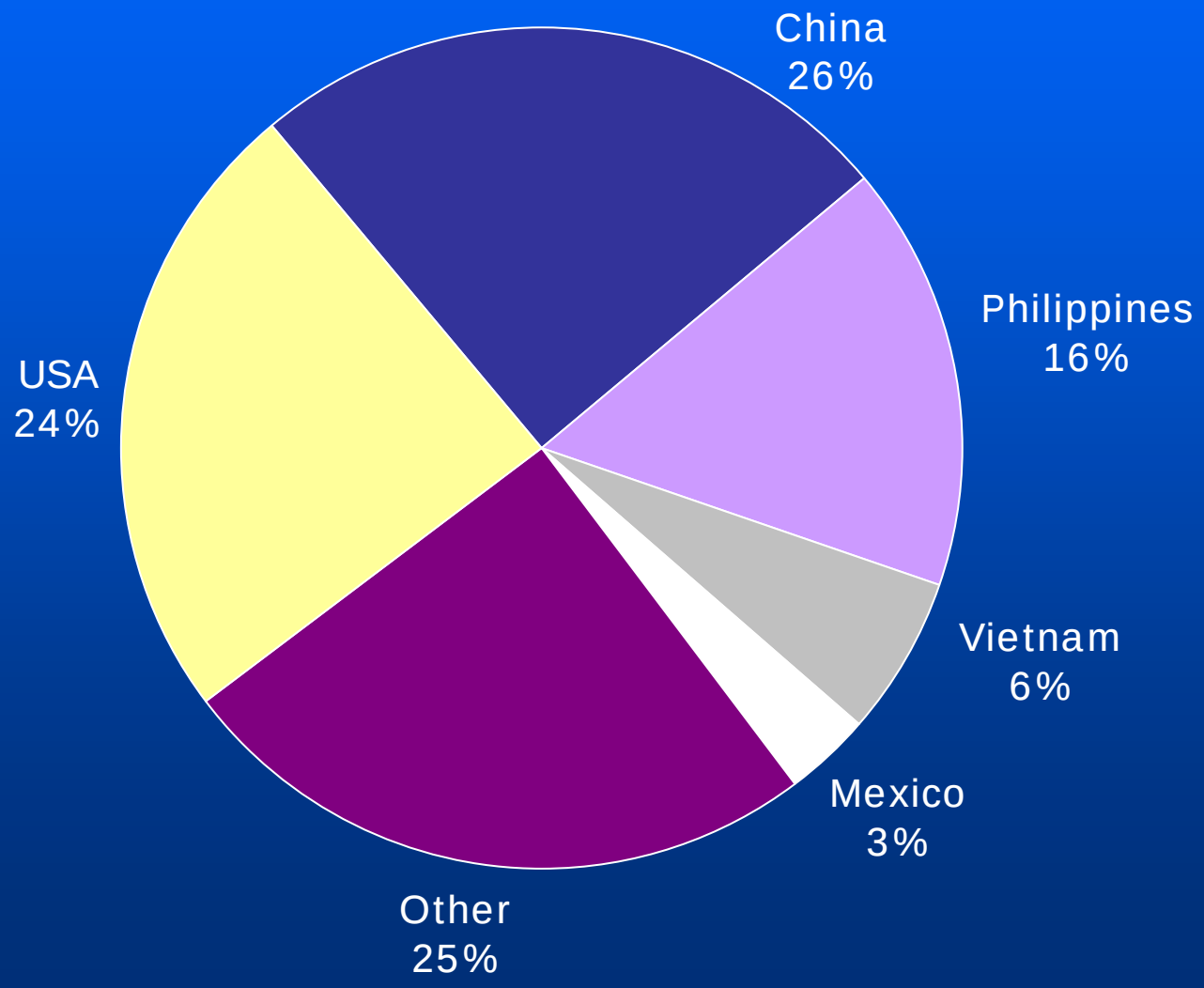
2009 Cases by Race/Ethnicity



TB Cases 1990–2009: Nationality



TB Cases 2009: Place of Birth



TB Cases 2009: Social Factors

HIV:

- 7.8% of all cases (9 cases)
  - Lowest number in last 5 years (11-13 cases per year)

Social Factors:

- Homelessness: 13% (15 cases)
- Drug abuse: 10.3% NIDU, 1.7% IDU
- Alcohol abuse: 8.6%

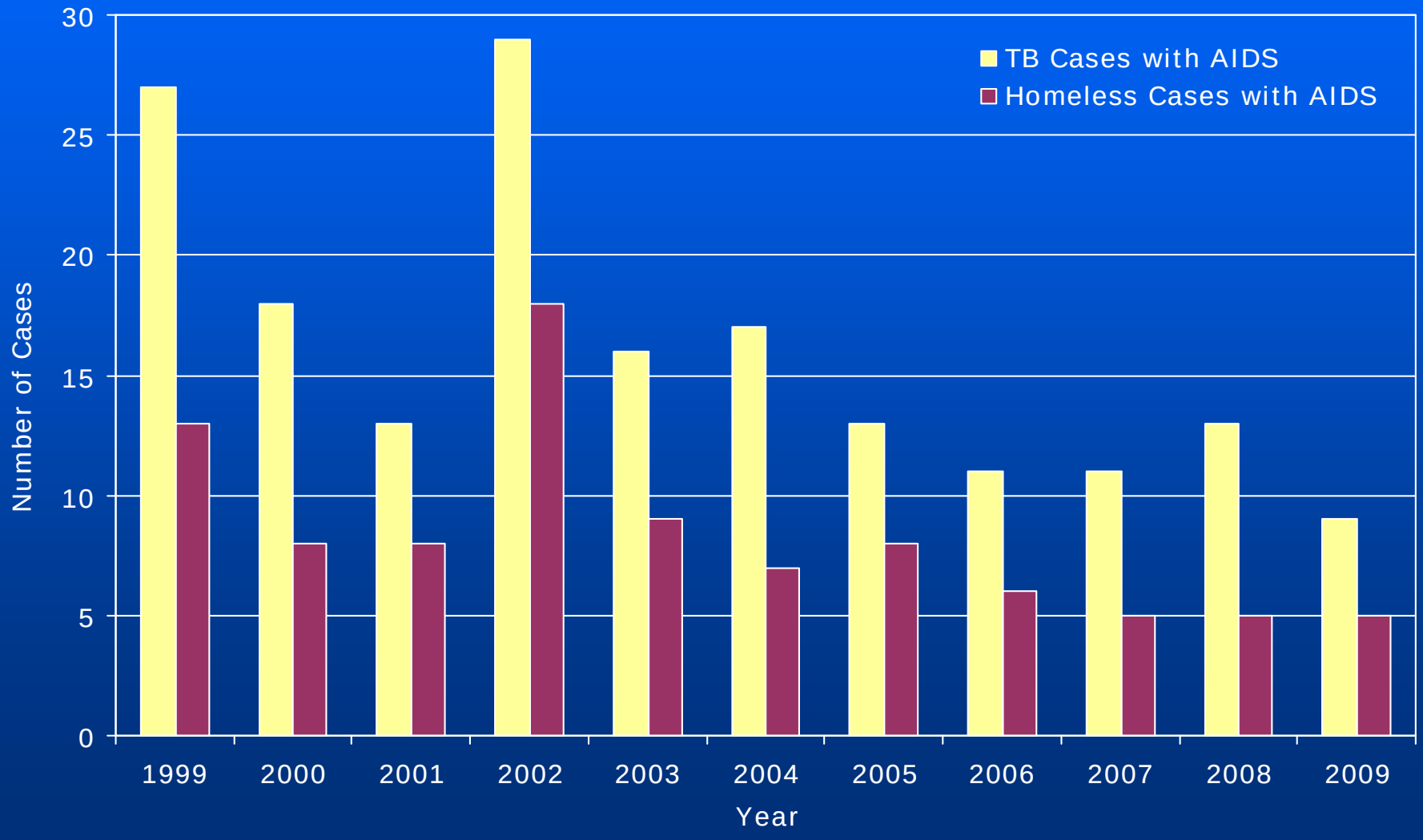
Homeless and SRO Cases 2003-2009

Year	Shelter	SROs	Street/Other
2003 (n=21)	7 (33 %)	11 (52%)	2 (10%)
2004 (n=11)	3 (28%)	4 (36%)	4 (36%)
2005 (n=17)	1 (6%)	11 (65%)	5 (29%)
2006 (n=22)	4 (18%)	12 (55%)	6 (27%)
2007 (n=25)	5 (20%)	12 (48%)	8 (32%)
2008 (n=15)	4 (27%)	6 (40%)	5 (33%)
2009 (n=15)	0	7 (47%)	8 (53%)

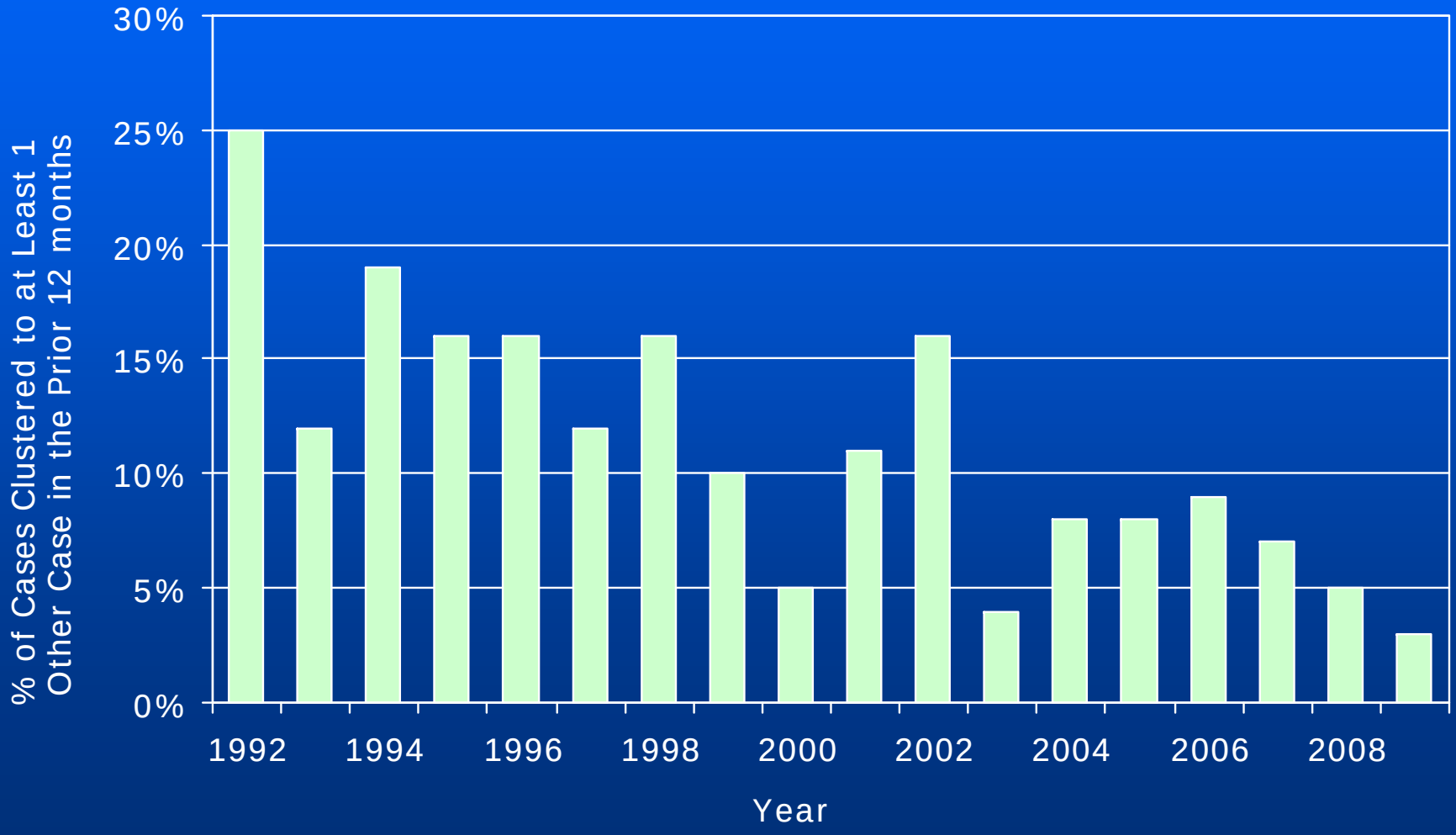
2009 Homeless Population: Shelter=1,206, Street=2,709

2009 Homeless Rate: Shelter=0/100,000!, Street=295/100,000

HIV/TB 1999-2009

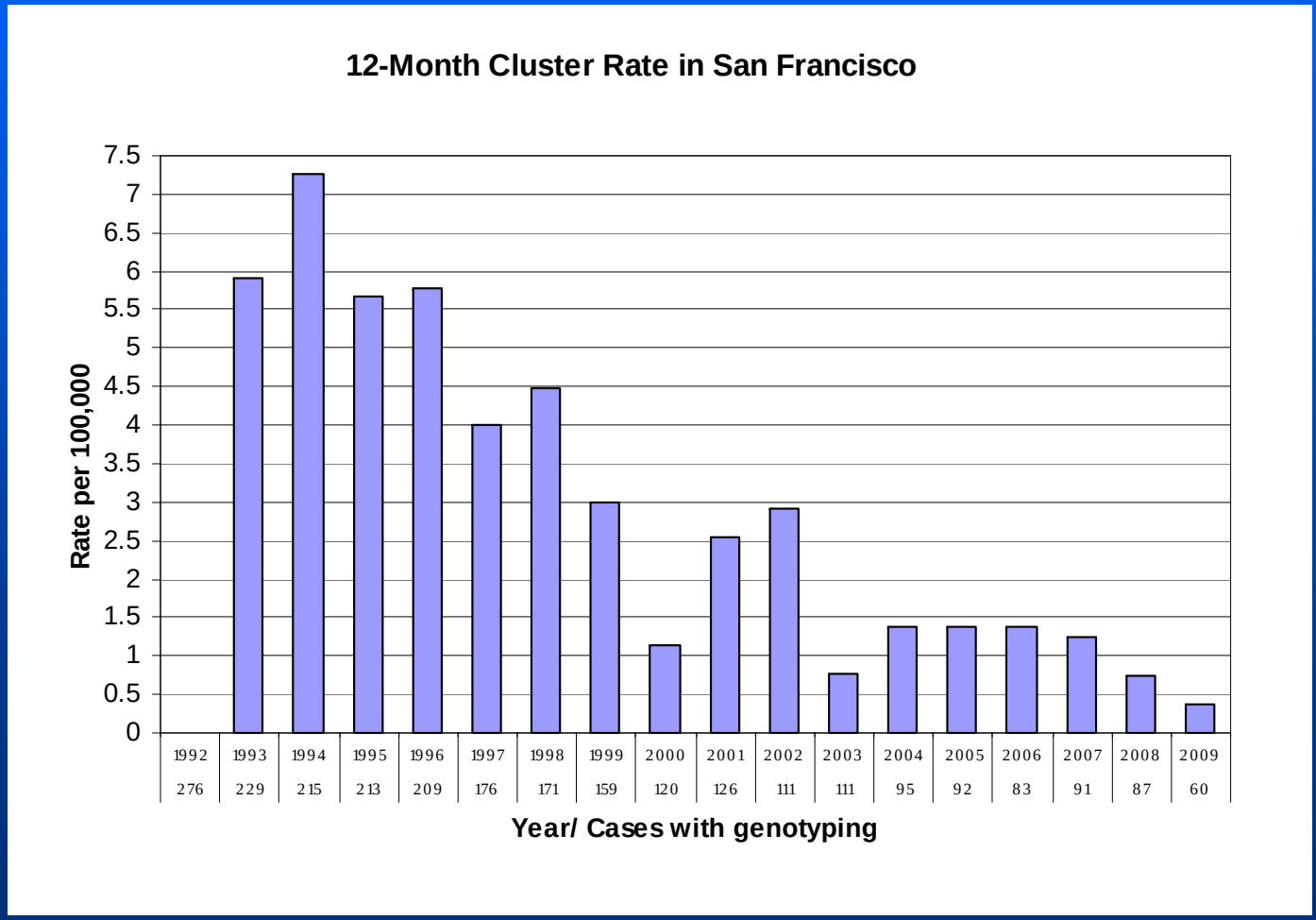


Case Clustering In San Francisco, 1992-2009*



*Based on RFLP/PGRS typing

Case Clustering* In San Francisco, 1992-2009 (2)



TB Cases 2009: Drug Resistance

- INH: 9.4% of Cx+ cases resistant to INH
  - 4 cases mono-INH resistance
  - 4 cases INH + non-RIF resistances
- MDR: 0 cases in 2009!
- Acquired: None!

MDR/XDR Drug Resistance Patterns: 1999-2009

YEAR	INH	RIF	EMB	PZA	Strep	Ethion	PAS	Capreo	Inject.	Quino.
1999										
2001										
2002										
2003										
2004										
2005										
2006										
2007										
2008										

TB Deaths 2009

- 8 deaths among TB cases
  - None were dead at diagnosis
  - 7 diagnosed/treated by private MD
  - all were male
  - 6 were foreign-born
  - 6 were Asian
  - Ave. age at diagnosis– 70 years old (range 45-88 years old)
  - Time from treatment to death – 60 days (15-111 days)

Management and Treatment of Active TB

Treatment of Active TB

- Continue to meet national, state and local goal of 98% treatment completion
  - Since 2005:
    - Only lost 5 cases
    - Successfully treated 608 cases (6 MDR)
- 94% of cases completed within 12 months (Goal: >=90%)
- 98-100% started on an adequate and timely regimen (Goal: 100%, >=95%)
- 98% treated by DOT (Goal: 90%)

HIV Testing

Year*	Over 15 y.o.			25-44 y.o.			45-64 y.o.		
	Cases**	Offered	Refused	Cases**	Offered	Refused	Cases**	Offered	Refused
2005 (44)	119	107 (79%)	35 (29%)	34	34 (100%)	8 (24%)	28	27 (96%)	8 (29%)
2006 (48)	107	88 (82%)	26 (24%)	29	29 (100%)	5 (17%)	34	33 (97%)	9 (26%)
2007 (43)	131	115 (88%)	39 (30%)	36	36 (100%)	9 (25%)	46	46 (100%)	15 (32%)
2008 (41)	104	89 (86%)	24 (23%)	28	26 (93%)	2 (9%)	27	26 (96%)	9 (33%)
2009 (45)	104	93 (87%)	7 (7%)	21	20 (95%)	2 (10%)	38	38 (100%)	2 (5%)

*() Average age of HIV+ cases. **Without a known positive result.

Active Case Finding and Targeted Testing

Case Finding Methods

- Passive
  - Hospital and MD referrals

- Active (TB Control Priorities)
  - Immigration screening (B-notification)
  - Contact Investigation
  - Community screening

- 32% of cases in 2009 found through active TB screening (37 of 116 active cases)
- Targeted testing yields almost 4x more cases than contact investigation and immigration screening combined (5 c.i./5 b-notification – 9%)

2009 Referrals and Targeted Testing Outcomes

	Imm.	C.I	T.T Foreign-born	T.T. U.S.-born	Total
Referred/ Identified	291	1,031	1,325	560	3,207
Evaluated	232 (81)	731 (72)	1,231 (93)	496 (89)	2,690 (84)
TB3	5 (2)	5 (0.7)	20 (2)	7 (1)	37 (1.4)
TB2/4	135 (58)	201 (27)	961 (78)	406 (82)	1,703
Eligible for LTBI Rx	97 (72)	183 (91)	559 (58)	158 (39)	997 (63)
Started LTBI Rx	82 (85)	139 (76)	474 (85)	125 (79)	820 (82)
Completed LTBI RX (2008)	93 (83)	120 (83)	397 (71)	73 (58)	683 (78)

TOPS Activities

- 614 persons needing clearance screened for TB
  - 6% decrease from 2008
- Attended 6 Project Homeless Connect events
  - 96 homeless received shelter clearance
- 58 patients placed in DOPT
- 87% completed LTBI Rx by DOPT in 2008- highest completion rate in 5 years!

CHOPS Activities

- 89 patients placed on LTBI treatment
  - Estimated 93% completion for 2009
  - 2008 completion: 82%
- Since 2005:
  - 633 LTBI patients treated at CHOPS
  - completion rate: 78%-83%

Contact Investigation

Contact Evaluation Outcomes 2009

	Contacts to Smear+ Cases	All Contacts
Contacts eligible for evaluation	685	1009
Fully evaluated	491 (72%)	731 (72%)
Cases found	4	5
Infection prevalence	139 (28%)	201 (27%)
Initiation of LTBI treatment of eligible	101 (78%)	139 (76%)

Contact Evaluation Outcomes 2009 (2)

- Fully evaluated rate increased 8% from 2008 (64% to 72%)
- Not evaluated rate decreased 9% (20% - 11%)
- LTBI treatment completion for contacts to smear+ and/or culture+ cases increased 14% from 2005 to 2008 – now 84% completion.

2009 Progress on Program Objectives

Active TB Cases and B-Notification

Objective	Year	Goal	Progress	Number Not Meeting Objective
TREATMENT AND CASE MANAGEMENT OF PERSONS WITH ACTIVE TB				
Treatment Completion within 12 Months	2008	≥90%	88%	4 – all had legitimate reasons for extending treatment
Overall Treatment Completion	2008	≥98%	100%*	
Initiation of a Four-Drug Regimen – Cases <15	2009	≥75%	100%	
Initiation of a Four-Drug Regimen – Cases ≥15	2009	≥93%	91%	10 – 8 started on adequate regimens
Initiation of an Adequate Treatment Regimen	2009	100%	98%	2 – eventually placed on correct regimen
Timely Treatment Initiation	2009	≥95%	100%	
Sputum Culture Conversion	2008	≥90%	70%	20 – 2 not documented, 18 >2 months
DOT	2009	90%	98%	2 – 1 homeless, 1 INH-resistant
Drug Susceptibility Testing	2009	100%	100%	
Sputum Culture – Cases >12 Years of Age	2009	≥97%	99%	1 – bronchial fluid collected
HIV Testing Offered	2009	90%	89%	11 – 9 over age 75, 1 tested neg. last 6 mo., 1 <18 y.o.
CLASS A/B/ NOTIFICATIONS				
Evaluation	2009	≥97%	97%	9 – 1 UTL, 4 no show for evaluation, 4 return to POB
Time from Notification to Evaluation (average)	2009	<14 days	18 days	70 – 41 evaluated within 30 days
LTBI Treatment Initiation	2009	≥95%	91%	15 – 7 refused, 8 not offered treatment
LTBI Treatment Completion	2008	≥80%	86%*	17 – 5 d/c due to adv. reaction, moved, etc.

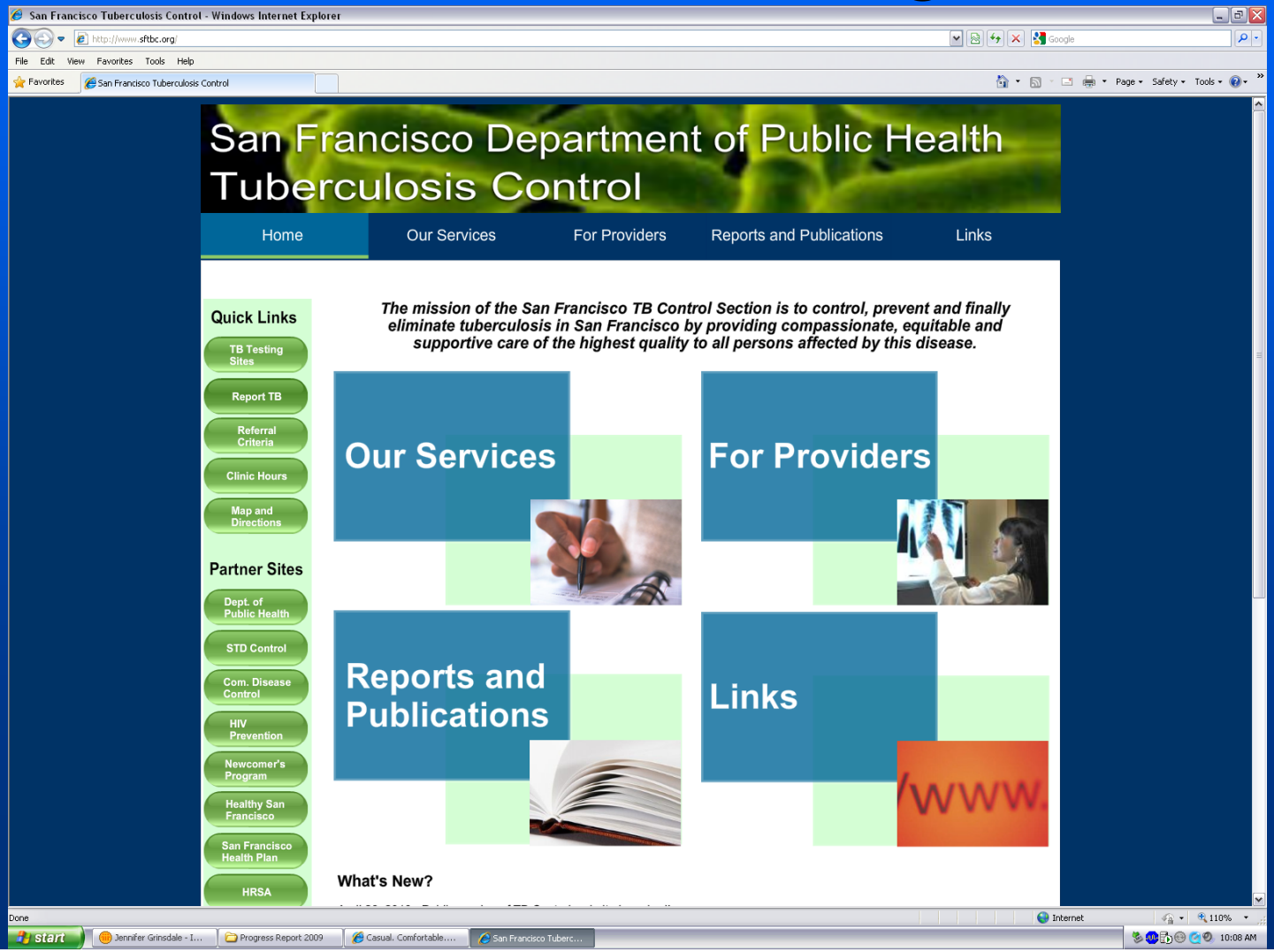
Referrals, C.I, and Surveillance

Objective	Year	Goal	Progress	Number Not Meeting Objective
TARGETED TESTING AND COMMUNITY REFERRALS				
Evaluation of Community Referrals	2009	≥95%	91%	171 – 947 foreign-born, 64 U.S-born
LTBI Treatment Completion - U.S.-born	2008	73%	59%*	51 – lost/refused
LTBI Treatment Completion - Foreign-born	2008	80%	74%*	142 – lost/refused
CONTACT INVESTIGATION				
Contact Evaluation	2009	≥95%	74%	266 – 116 no follow-up test, 77 – incomplete evaluation
LTBI Treatment Initiation Among Contacts	2009	80%	70%	58 – 2 <15 y.o., 56 ≥ 15 y.o.
LTBI Treatment Completion Among Contacts	2008	84%	84%	21 – lost/refused
TB Case Interview	2009	95%	82%	17 – not interviewed within 1 day of report to TB clinic
TB Case Home Assessment – Smear +	2009	75%	48%	24 – no assessment within 3 days of report to TB clinic
TB Case Home Assessment – Smear -	2009	75%	57%	20 – no assessment within 7 days of report to TB clinic
Contact Identification	2009	≥95%	98%	1 – no contacts identified for AFB smear+ case
TB SURVEILLANCE				
Timely Case Reporting	2009	90%	77%	27 –not reported within 1 day of starting treatment (PMD)
RVCT Reporting	2009	100%	100%	
Documentation of HIV Status	2009	≥80%	92%	2 – offered testing but refused
Drug Susceptibility Testing and Reporting	2009	100%	100%	

2010 Epi Projects

- Continue evaluating deaths with “Death Tool”
- Analyze and publish SF QFT experience
  - Public health use of QFT
  - Use in contact investigation
  - Use in pediatric patients
- Continue monitoring C.I. outcomes
- Review LTBI and active TB rates by race/ethnicity
- Describe benefits of active case finding in San Francisco

We have a new website!
www.sftbc.org



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