POPULATION HEALTH DIVISION

PROTECTING AND PROMOTING HEALTH AND EQUITY

TB ELIMINATION IN SAN FRANCISCO

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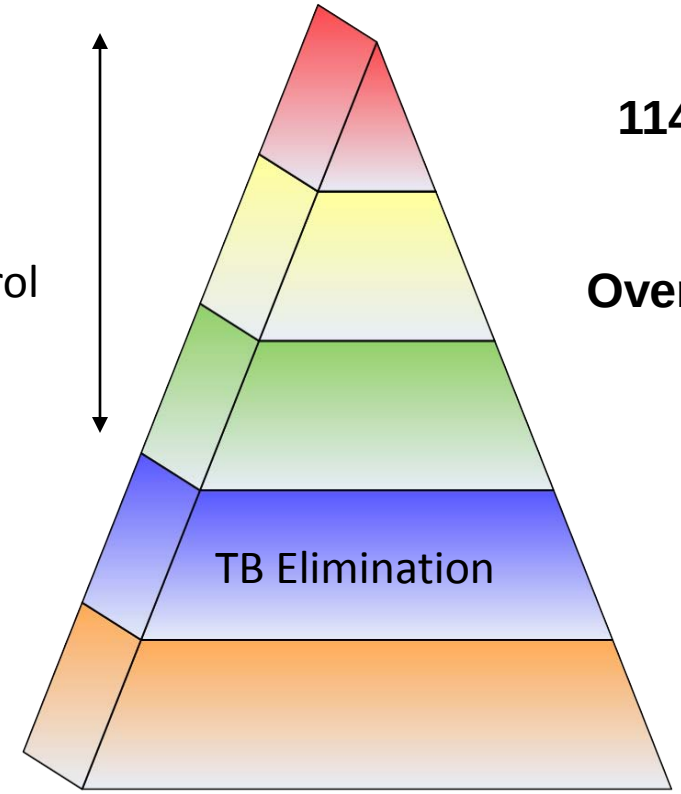
Why do we care about tuberculosis?

- TB is a social disease
  - airborne transmission -> public safety
- TB is a deadly disease
  - One in nine Californians with TB dies with their TB disease
- TB is a treatable disease
  - Long courses of treatment allow engagement of patient into healthy behaviors, linkage to care for other comorbidities
  - Treating TB infection will eliminate TB disease
- Drug resistant TB globally is steadily increasing

Span of TB Control Activities in San Francisco 2014



114 San Franciscans with TB Disease

Over 400 San Franciscans with possible TB Disease

1,100 Contacts to TB Cases

78,000 San Franciscans with TB Infection

850,000 San Franciscans

How far are we from elimination?

TB elimination: <1 case per million

United States, 2013

30 cases per million (all)

12 cases per million (U.S. born)

156 cases per million (foreign-born)

San Francisco, 2013

1360 cases per million (all)

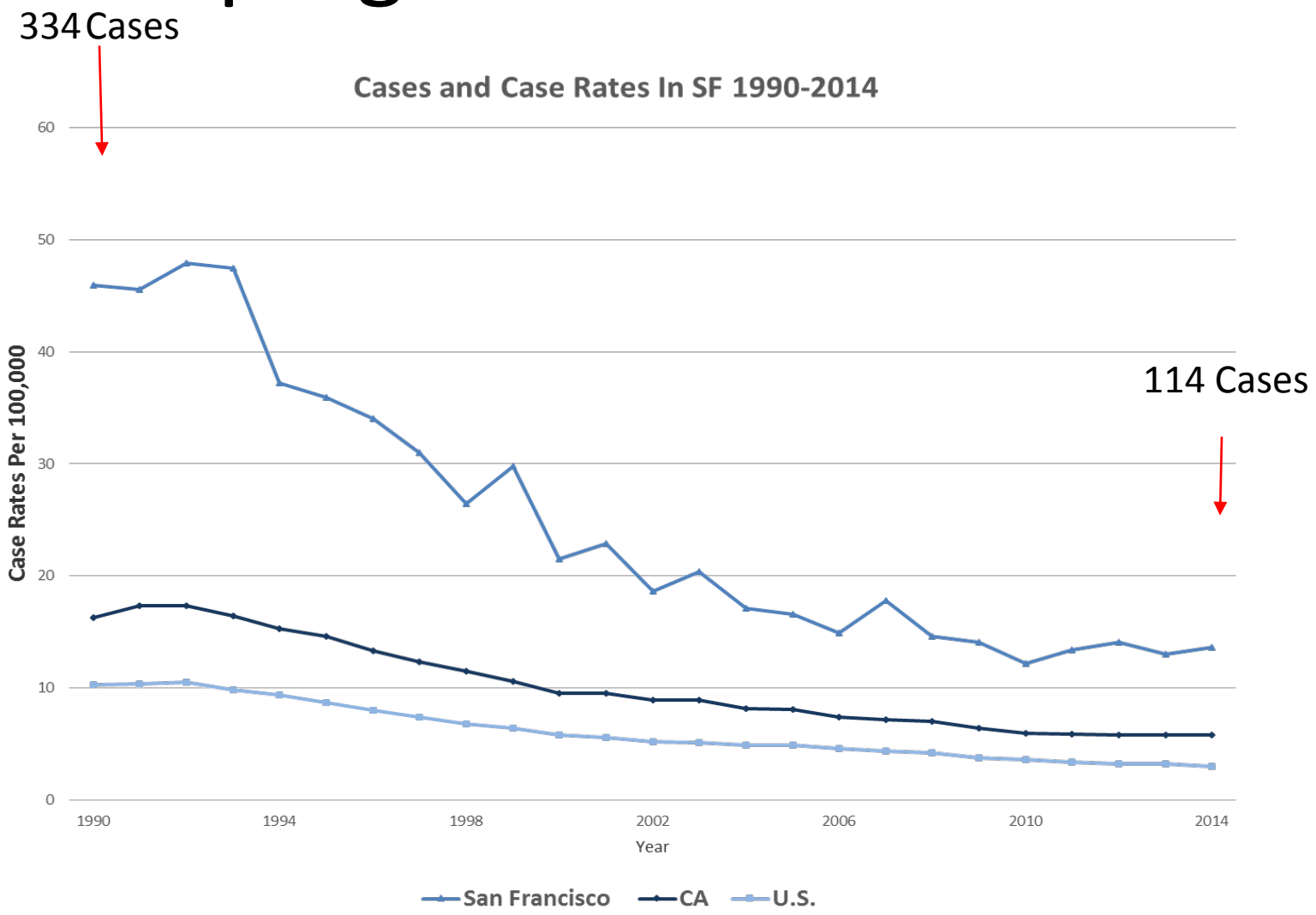
23 cases per million (U.S. born)

3510 cases per million (foreign-born)

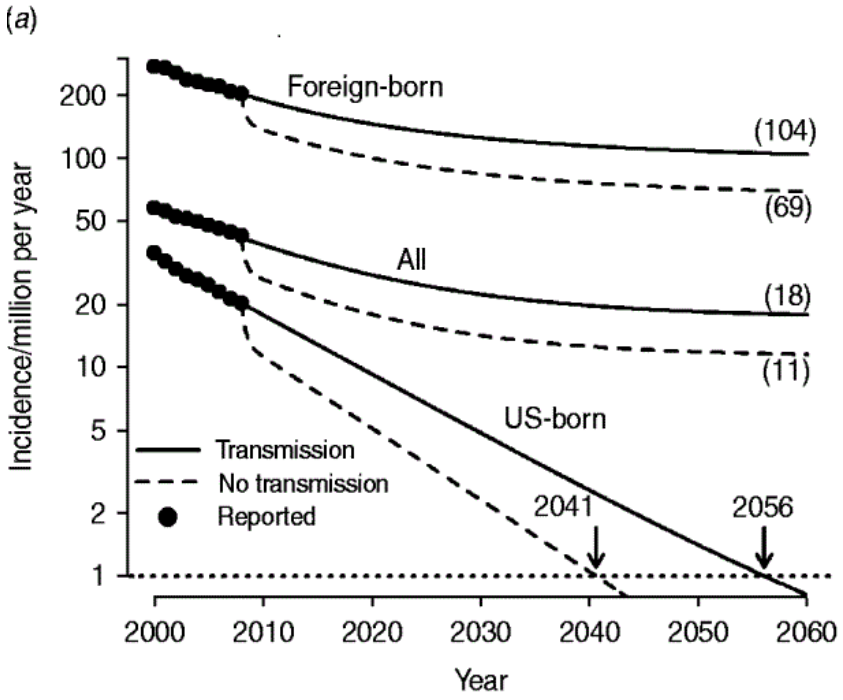
What are the benefits of elimination?

- Eliminate morbidity and mortality from TB
- Eliminate exposure to TB and possible infection
- Eliminate basis of ongoing TB testing in low risk populations
  - Health care workers
  - State prison inmates
  - School children
  - K-12 employees, volunteers
  - Preschool/daycare employees
  - Other city agencies (police, fire)

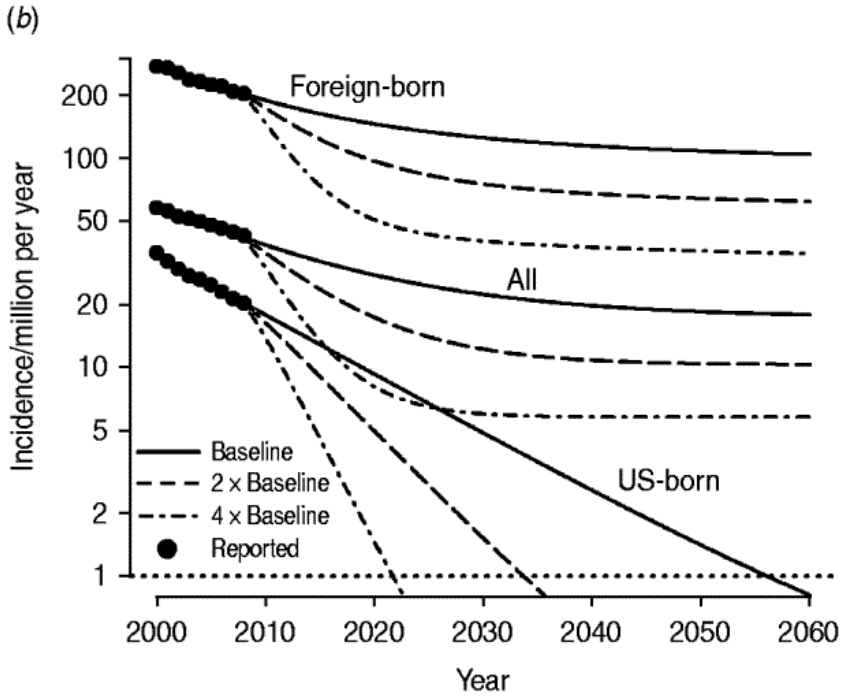
TB Cases in San Francisco: stable but no progress toward elimination



How do we get to TB elimination faster?



Status quo: no end in sight

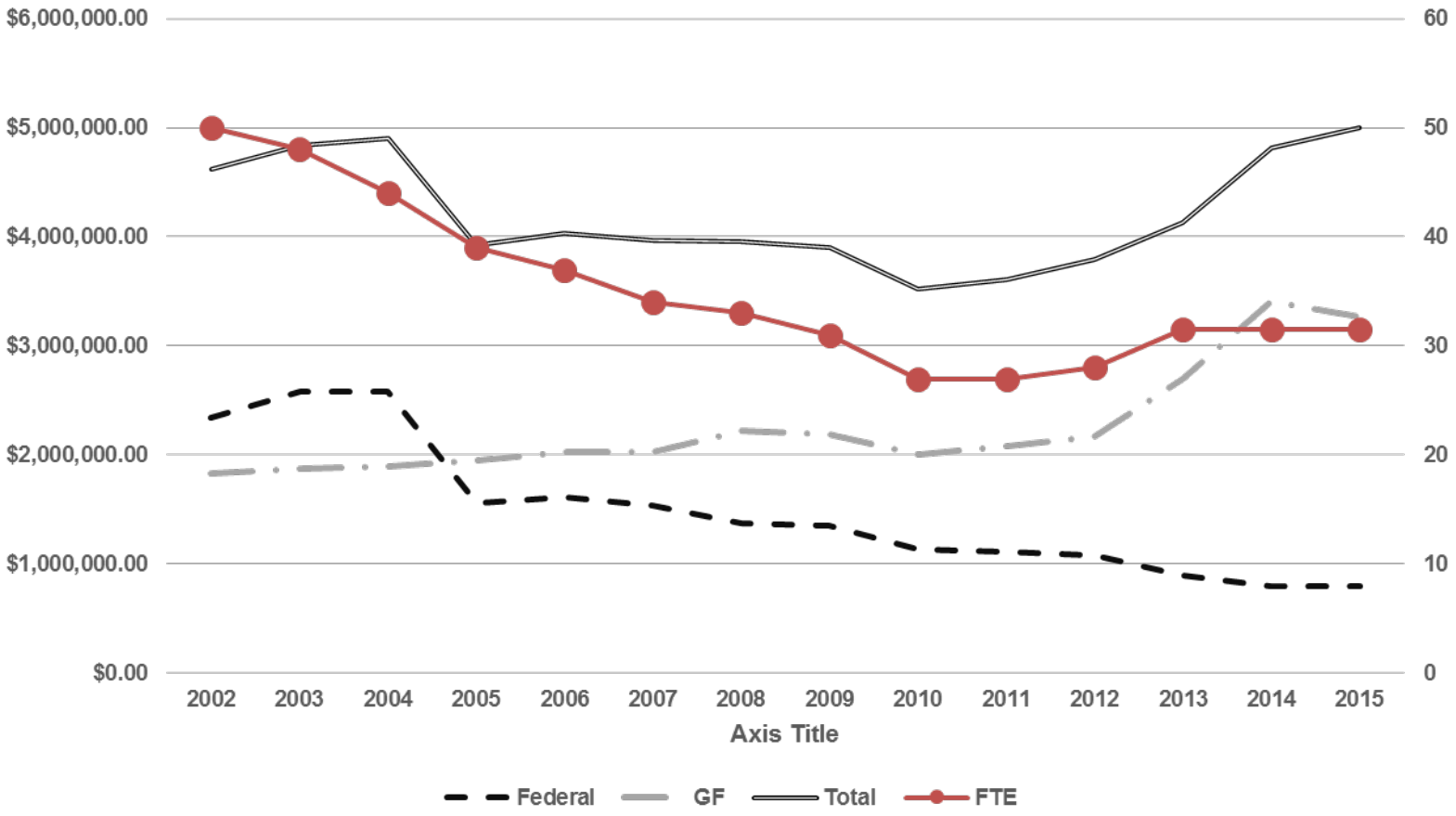


Increase TB infection treatment bends the curve toward elimination

National strategy for TB elimination: Increase completion of treatment for TB infection by four fold over the next 3-5 years.

Hill et al., Epidemiol Infect, 2012

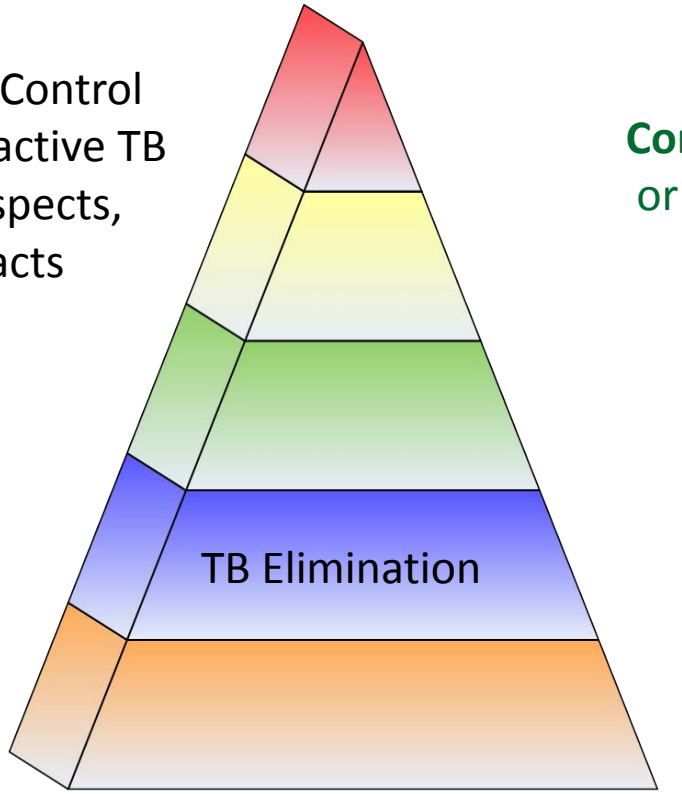
Funding for SF TB program has challenged progress toward elimination



Indirect rate 20-23%	5%			
Fringe rate 25%	28%	32%	37%	43-47%

TB Clinic Reduces Services in 2013 to focus on control activities

TB Clinic/Control still sees active TB cases, suspects, and contacts



Complicated: abnormal chest x ray, adherence or toxicity risk, immunocompromised

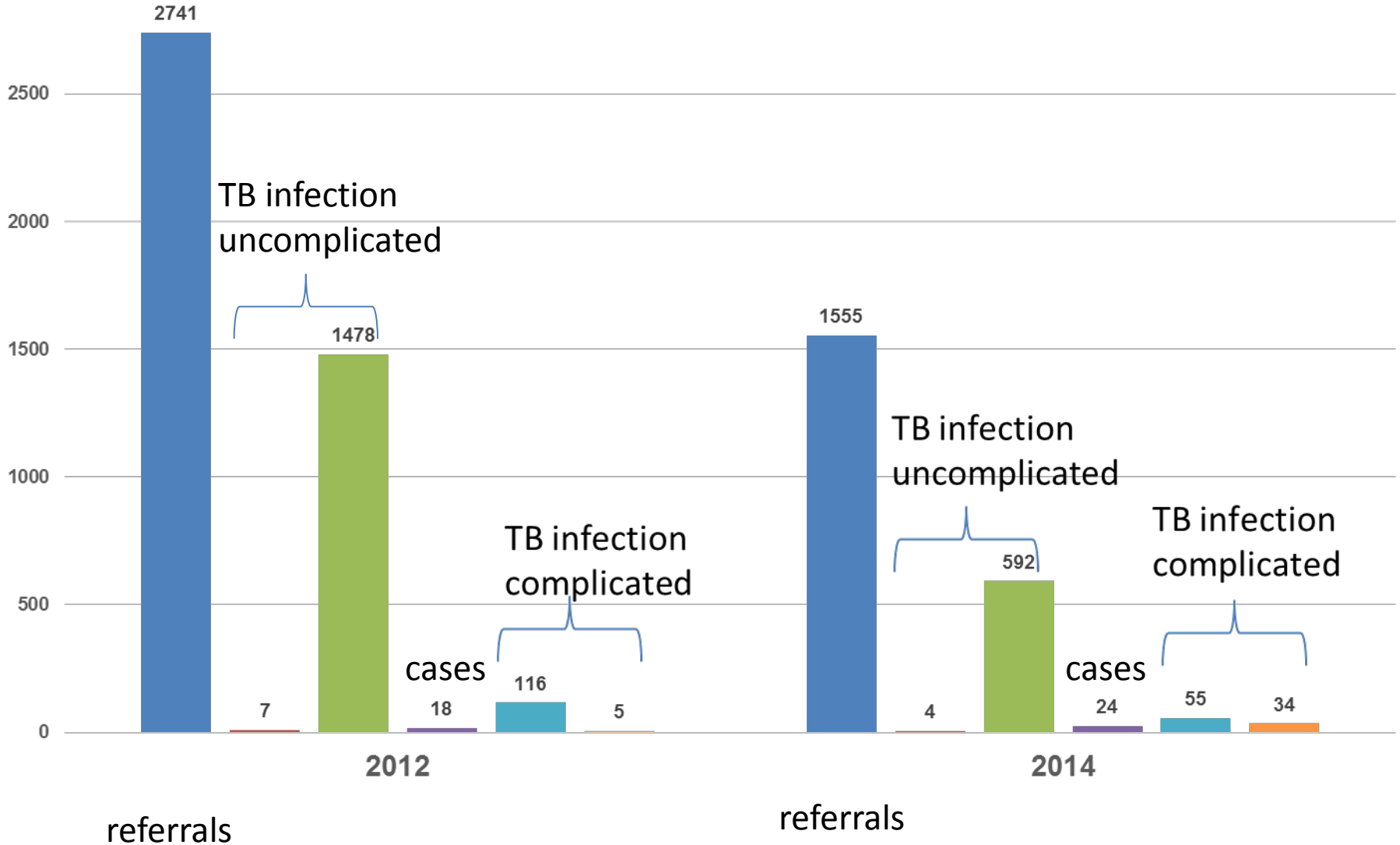
TB Clinic/Control sees complicated TB infection

Primary Care Clinics evaluate and treat uncomplicated TB infection

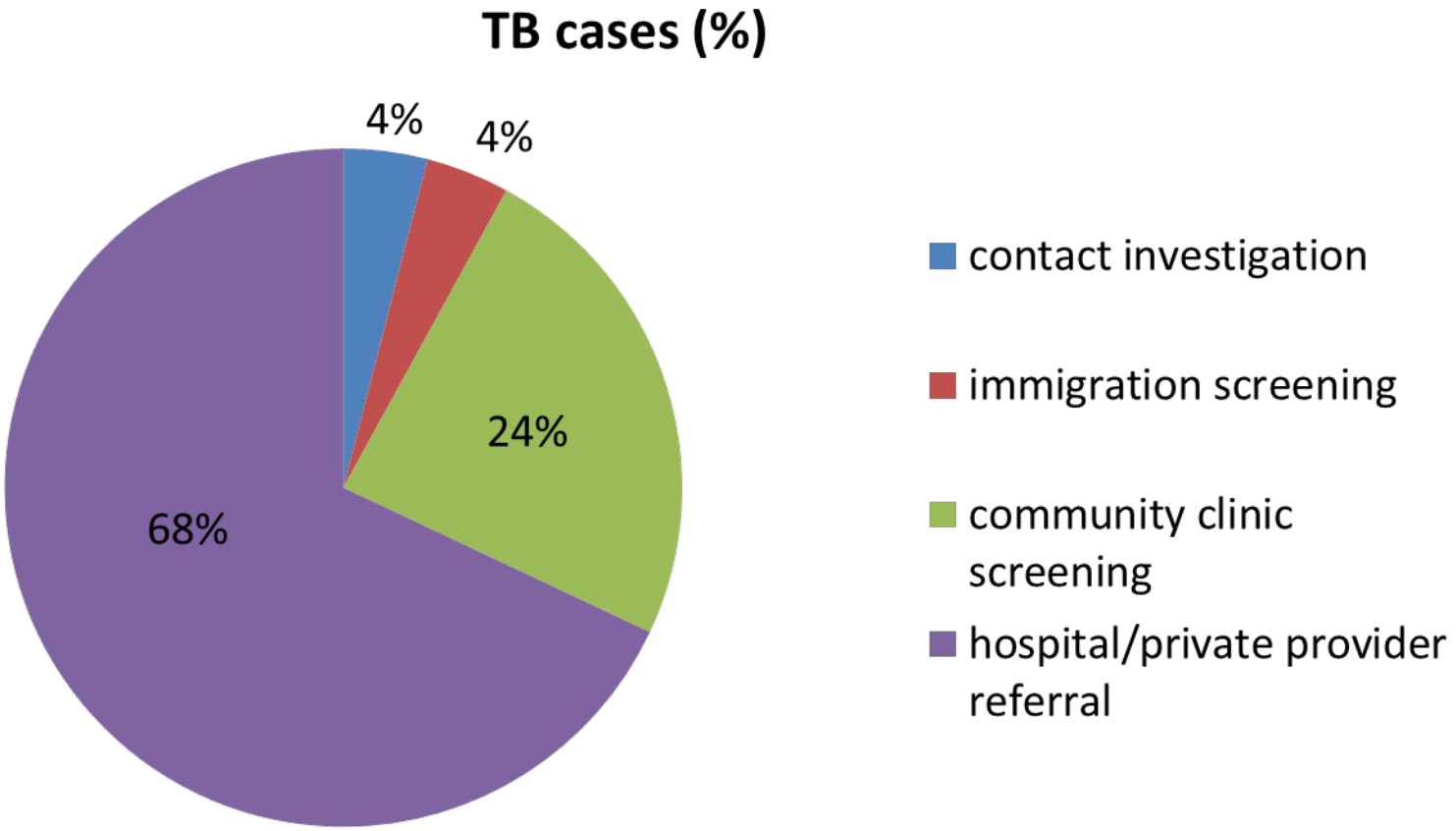
refer

Uncomplicated: normal chest x ray, no adherence or toxicity risk, children and young adults

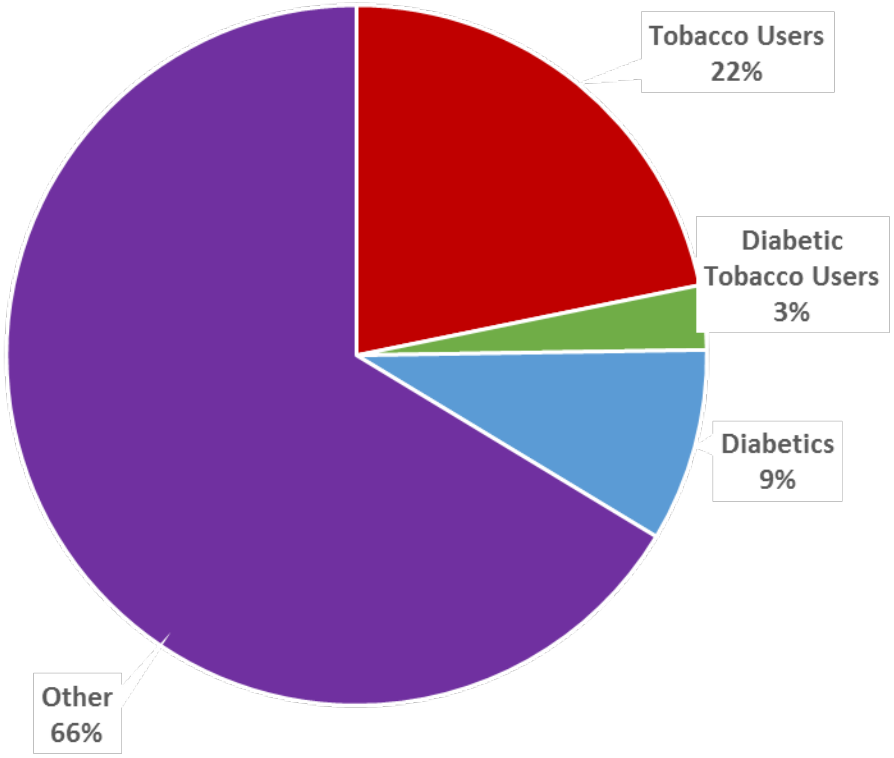
TB clinic referrals have not seen decrease in finding cases since reducing services



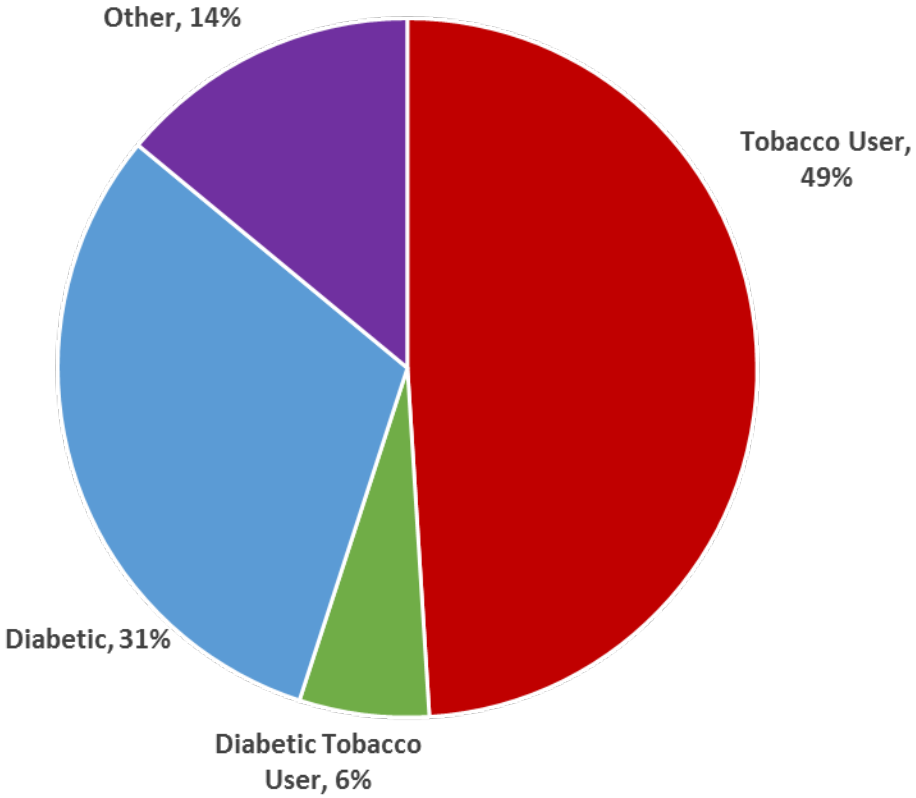
Finding SF TB cases is a shared activity between SFDPH and the private sector



Patients with Diabetes and Use Tobacco and have TB infection are at increased risk of progressing to TB disease

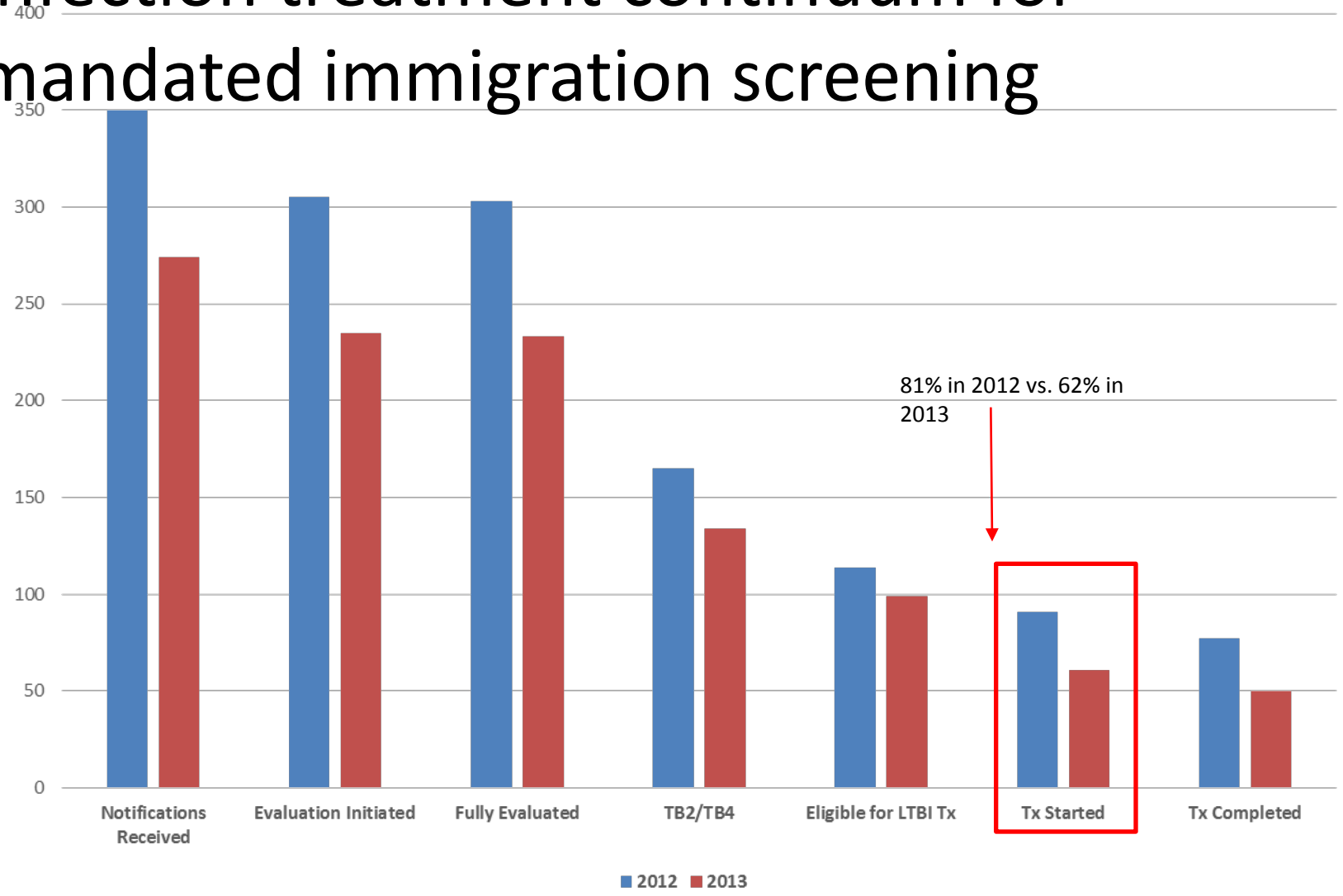


SF TB clinic patients with TB infection in 2014, n=646



San Francisco residents with Active TB Disease in 2014, n= 114

Setting a standard for primary care: The TB infection treatment continuum for mandated immigration screening



Opportunities for TB elimination in SF – why now?

- Electronic health record can be built to support risk assessment, and then track testing, diagnosis, and treatment
- Improved diagnostics for TB infection (interferon gamma release assays – blood tests)
- New rifamycin TB infection treatment – 3-4 months vs. 6-9 months, less toxicity, better completion rates
- Medical homes have infrastructure for chronic care monitoring of patients to limit toxicity and support treatment completion
- Exploring consultative support via teleconferencing to build limited experience with TB infection diagnosis and treatment

Eliminating TB in SF: Challenges

- The public is not aware that TB is a health concern in the U.S.
- TB preventive care is cost shared by the patient (co-pays for blood work, radiology, clinic visits)
- Capitated provider reimbursement does not include TB preventive care
- Providers are at different comfort levels with diagnosis and treatment of TB
- Decreasing federal support
- Increasing costs of workforce

Summary

- The SF TB program is controlling the spread of TB in the city and is a good investment for public safety
- There has been little progress towards eliminating TB in the city in the last decade.
- A TB elimination campaign is under way at the state and national level and San Francisco is a key contributor to the discussion.
- The campaign is in the planning phase and goal is to transform the diagnosis and treatment of TB infection in non public health primary care settings.
- Taking on TB elimination is the way to reduce the impact of TB as a health threat SF going forward

Acknowledgements

- Laurel Bristow, MSc, TB Prevention and Control Program Epidemiologist
- SF TB program Staff
- Population Health Division

California Tuberculosis (TB) Risk Assessment

A TB screening tool to be administered by licensed healthcare providers

CTCA California Tuberculosis Controllers Association

Curry International Tuberculosis Center

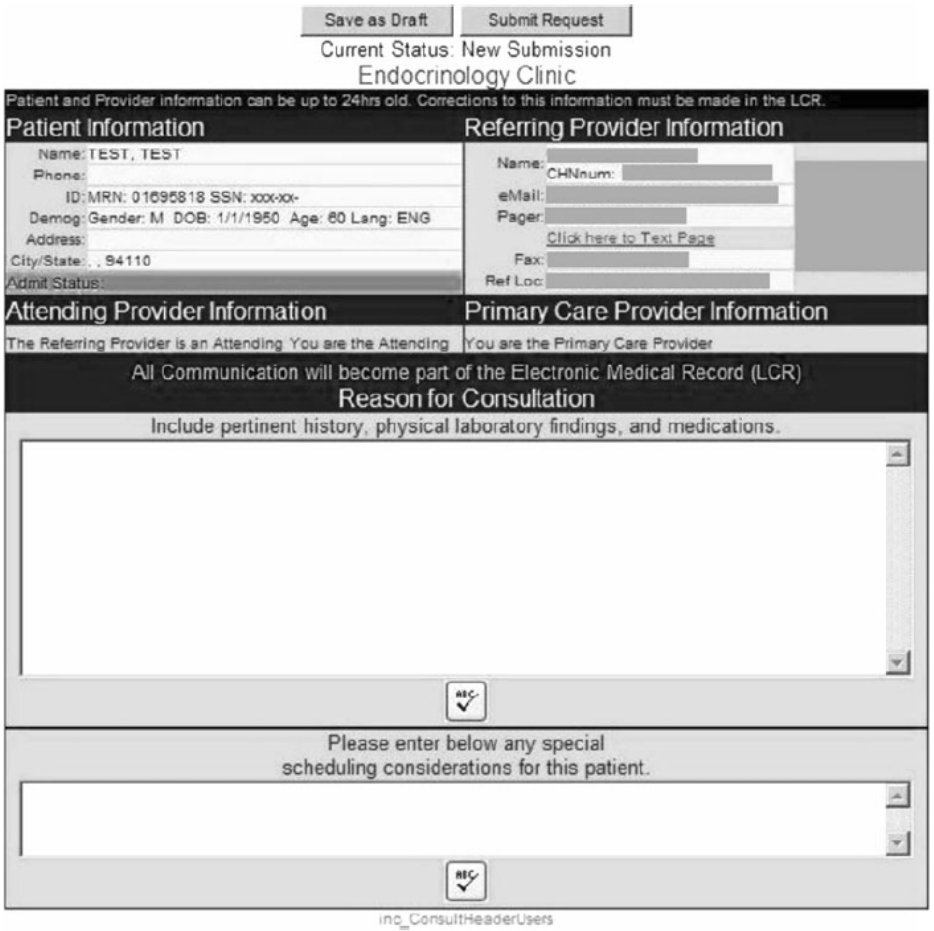
UCSF

RISK FACTOR Check appropriate boxes and assign highest testing/treatment priority		Testing / Treatment Priority
☐ Past history of chest x-ray with fibrotic changes or other findings suggestive of inactive or old TB, and no history of TB disease treatment.	In addition to TB testing, evaluate for active TB disease.**	HIGH
☐ HIV infection		
☐ Current or planned immunosuppression:	Organ transplant recipient, treated with TNF-α antagonist (e.g., infliximab, etanercept, others), steroids (equivalent of prednisone ≥15 mg/day for ≥1 month), other immunosuppressive medication	
☐ Close contact to someone with infectious TB disease within past two years		
☐ History of close contact to someone with infectious TB disease and has medical risk†		
☐ Foreign-born person from high TB prevalence country and has medical risk†	Countries within Africa, Asia/Pacific, Eastern Europe incl. Russia, Latin America incl. Mexico	
☐ Has stayed or worked in an urban homeless shelter and has medical risk†		
☐ History of close contact to someone with infectious TB disease; no medical risk†		MEDIUM
☐ Foreign-born person from high TB prevalence country; no medical risk†	Countries within Africa, Asia/Pacific, Eastern Europe incl. Russia, Latin America incl. Mexico	
☐ Has stayed or worked in an urban homeless shelter; no medical risk†		
☐ Traveled to or lived in high TB prevalence country for >1 month and has medical risk†	Countries within Africa, Asia/Pacific, Eastern Europe incl. Russia, Latin America incl. Mexico	
☐ Traveled to or lived in high TB prevalence country for >1 month; no medical risk†	Countries within Africa, Asia/Pacific, Eastern Europe incl. Russia, Latin America incl. Mexico	LOW Individualized decision to test*
☐ Healthcare worker or resident/employee of congregate setting	e.g., correctional institution, long-term care facility, drug treatment facility	
☐ No Risk Factors identified		NONE

† **Medical Risks:** Diabetes mellitus, end-stage renal disease, smoker within past one year, leukemia, lymphoma, silicosis, cancer of head or neck, intestinal bypass/gastrectomy, chronic malabsorption, body mass index ≤20.

* Persons may be tested on the basis of local guidance, epidemiology, and for regulatory reasons.

Ereferral: San Francisco Health Network and Consortium Clinics



Kim-Hwang, et al., "Evaluating Electronic Referrals for Specialty Care at a Public Hospital", J Gen Int Medicine, 25(10): 1123-8.

San Francisco: VA SCAN-ECHO and SFDPH for HIV care