SHOPS: Tuberculosis

A Prevention and Care Initiative

Oommen George, Project Leader, SHOPS (India), Abt Associates

Training of University of Manitoba Fellowship Students on…

Application of Program Science Approach in a Developing Country Setting

KHPT, Bangalore, September 4-5, 2014

Market-based Partnerships for Health

Acronyms

- C&S – Care and Support
- CB-NAAT – Cartridge-based Nucleic Acid Amplification test
- CME – Continuing Medical Education
- CS – Chest Symptomatic
- CTD – Central Tuberculosis Division
- CXR – Chest X-ray
- DNA – Deoxyribonucleic Acid
- DOT – Directly Observed Treatment
- DOTS – Directly Observed Treatment Short-course chemotherapy
- DST – Drug Sensitivity Test
- EOP – End of Project
- EPTB – Extra-pulmonary Tuberculosis
- FLW – Frontline Worker
- GoI – Government of India
- GoKA – Government of Karnataka
- HIV – Human Immunodeficiency Virus
- ICT – Information Communication Technology
- IPC – Inter-personal Communication
- IS – In-slum
- ISMH – Indian Systems of Medicine and Homeopathy
- ISTC – International Standards of TB Care
- LTFQ – Less-than-fully-qualified (practitioners)
- KOL – Key Opinion Leaders
- LPA – Line Probe Assay
- *M.tb. - Mycobacterium tuberculosis*
- MARP – Most-at-risk Population
- MBPH – Market-based Partnerships for Health
- MDR (DR) – Multi-drug Resistant (Drug Resistant)
- MIS – Management Information System
- MoH – Ministry of Health
- NRHM – National Rural Health Mission
- NTP – National Tuberculosis Program
- OS – Out-of-slum
- pHCP – Private Health Care Providers
- POMM – Practitioners of Modern Medicine
- PTB – Pulmonary Tuberculosis
- PT TB – Previously Treated Tuberculosis
- QI – Quality Improvement
- RNTCP – Revised National TB Control Program
- SHOPS – Strengthening Health Outcomes through the Private Sector
- SSM – Sputum Smear Microscopy
- STCI – Standards for TB Care in India
- TG – Target Group
- TB – Tuberculosis
- TST – Tuberculin Skin TestU
- SAID – United States Agency for International Development
- USD – United States Dollar
- WHO – World Health Organization

Presentation Sections

1. **Tuberculosis: the disease**
2. **Burden of tuberculosis**
   - **Global**
   - **National**
3. **RNTCP: the national TB control program**
4. **SHOPS tuberculosis project, Karnataka**
   - **Concept**
   - **Model**
   - **Process**
   - **Results**
   - **Lessons**
5. **Project Quality Improvement**

Objectives

- The ‘uninitiated’ learn a little about tuberculosis
- Know the burden of TB and its implications
- Learn the concept of SHOPS-TB – Why? How?
- Understand the SHOPS-TB model
- Learn about the intervention

  … and its results

- Know about the key issues which influenced quality improvement (QI) of the SHOPS project

Strategic planning: epidemiological appraisal, gaps

Program implementation and management

Monitoring, evaluation and research

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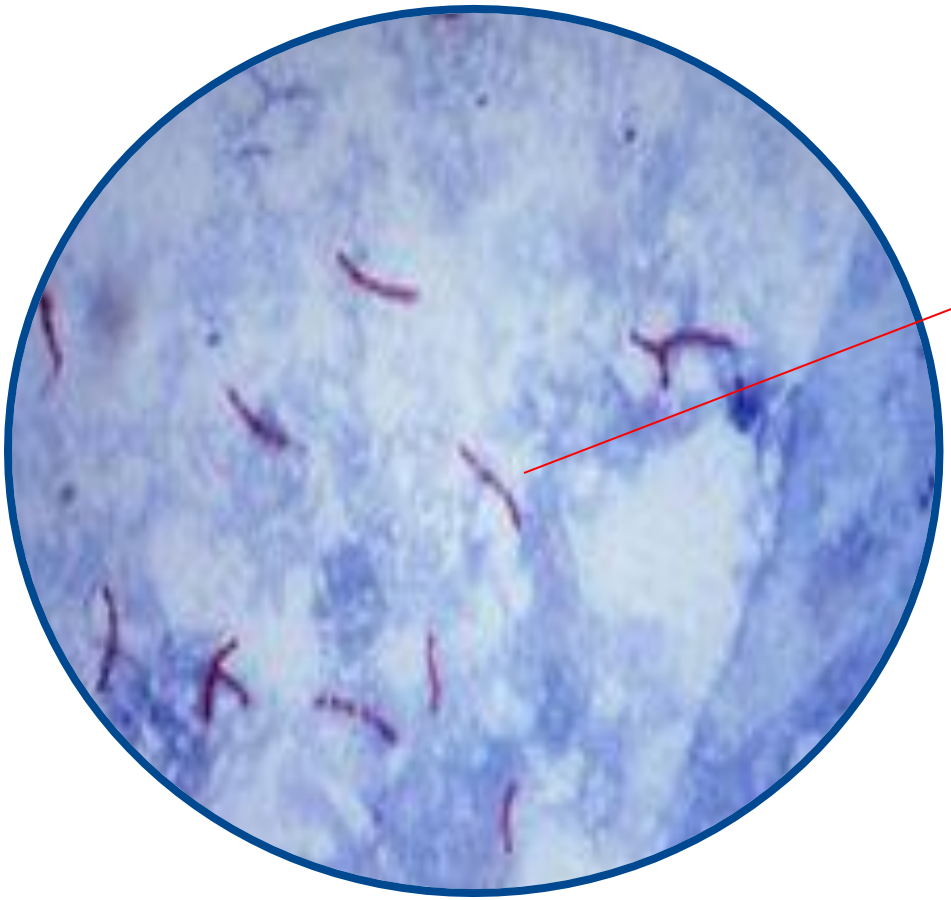
What do we know about TB?

What Causes TB?

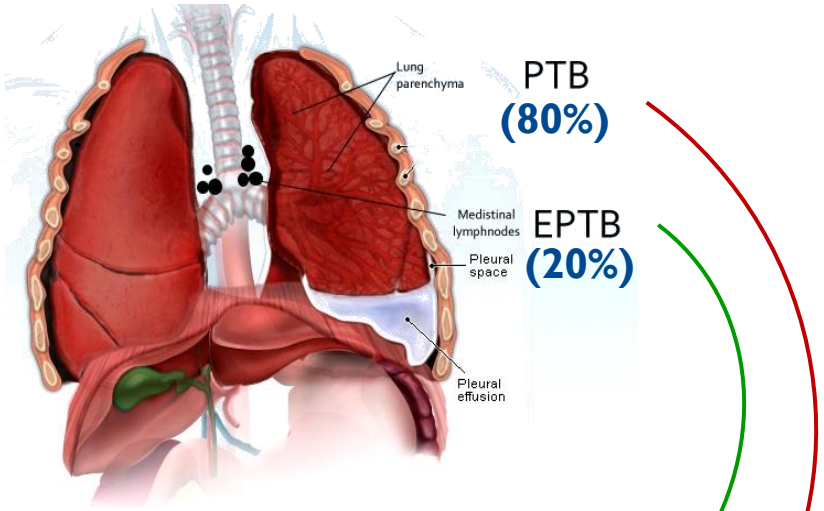
A bacteria called *Mycobacterium tuberculosis (M.tb.)*



Mycobacterium tuberculosis
(2-4µm long) x (0.2-0.5µm wide)

M.tb. is not new… **but is adapting dangerously to its current environment!**

How does TB Spread?



PTB (80%)

EPTB (20%)

No Transmission

Transmission

Key Facts About TB

- TB usually affects the **lungs** (~ 80%)
- Spreads through **airborne droplets** of bacteria-containing sputum or saliva
- In India, a person has a **10% to 15% life-time risk** of getting TB (about 10% annual risk, if also HIV+)
- The disease causes **cough**, fever, loss of weight **➔ 'consumption' ➔ death**

Common Symptoms of Lung Tuberculosis

- Cough – Persistent, Productive
- Chest Pain
- Shortness of Breath
- Hemoptysis

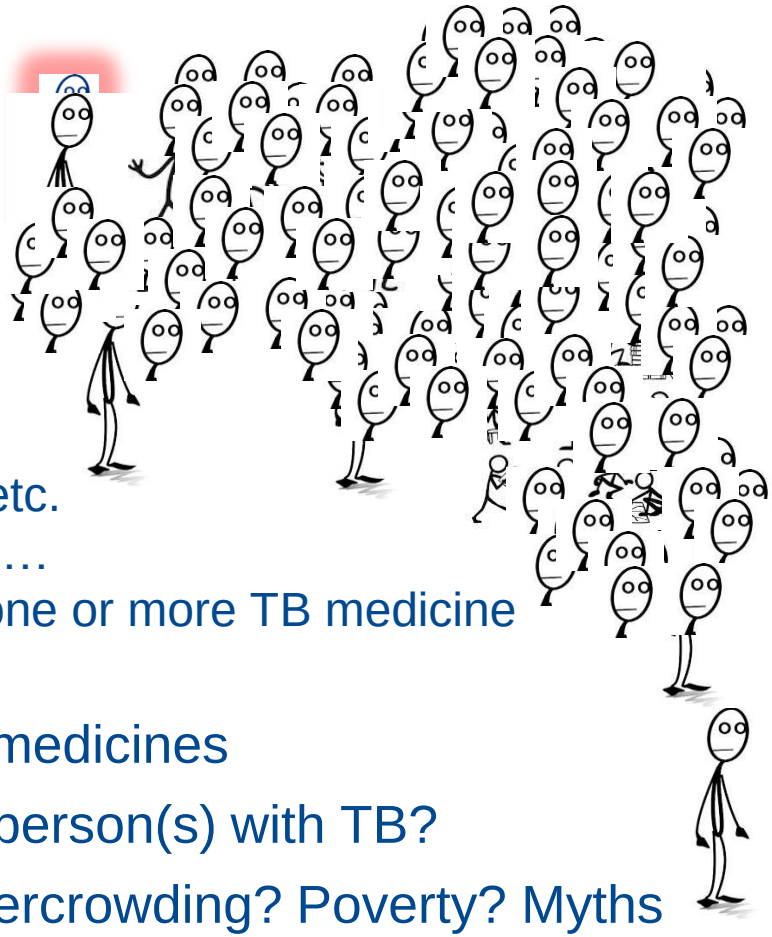
- Fever
- Night Sweats
- Tiredness

- Loss of appetite
- Loss of weight

- Generalized weakness

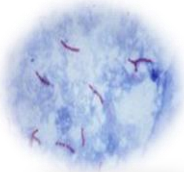
Diagnosis of Tuberculosis: Clinical Evaluation

- History: What's the story?
  - Symptoms:
    - Persistent cough > 2 weeks?
    - Fever?
    - Weight loss?
    - Night sweats?
  - Co-morbidities and associated risks:
    - Diseases – diabetes, malnutrition, HIV, etc.
    - High-risk behavior – smoking, alcoholism…
    - Conditions which contra-indicate use of one or more TB medicine
    - Work environment
  - History indicating likely response to TB medicines
  - Previous exposure? Close contact with person(s) with TB?
  - Socio-demographic-cultural profiles: Overcrowding? Poverty? Myths and beliefs? Stigma?
- Physical examination



Diagnosis of Tuberculosis: Investigations

- Confirmatory tests:
  - See the germ

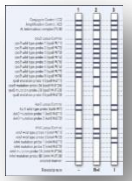


e.g. *Mycobacteria* identified using sputum smear microscopy

  - Multiply the germ

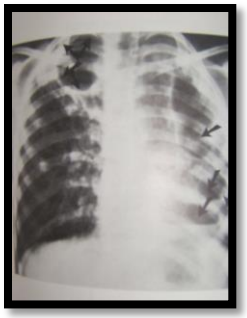
e.g. sputum culture [advantage: can also test sensitivity to drugs]

  - Identify bacteria-specific DNA



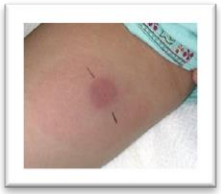
e.g. CB-NAAT, LPA [advantage: can also test sensitivity to 1 or 2 drugs]

- Tests to support diagnosis
  - Radiography



e.g. CXR; highly sensitive, but not specific

  - Skin/blood tests to detect immune response



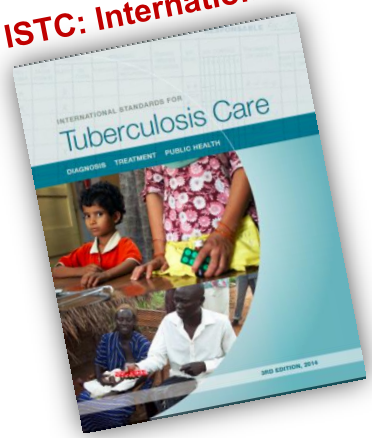
e.g. Tuberculin skin test (TST): identifies previous exposure to *M.tb.*

Post-diagnosis Management of Tuberculosis

TB patients need to be notified to public health officials

Treatment using a cocktail of antibiotics; 'short-course' chemotherapy

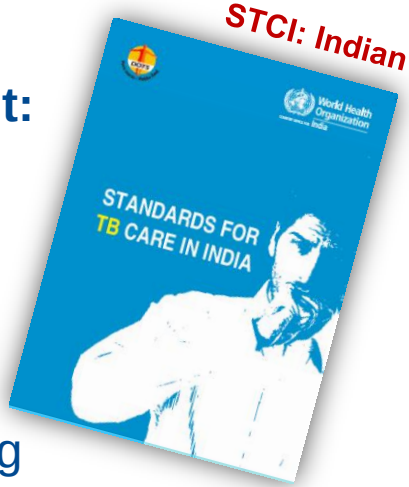
ISTC: International



Standards governing TB management:

- Diagnosis and notification
- Treatment
- Ensuring treatment compliance
- Prevention of spread
- Tracing infected persons
- Patient and family support, counseling
- Social support

STCI: Indian



Presentation Sections

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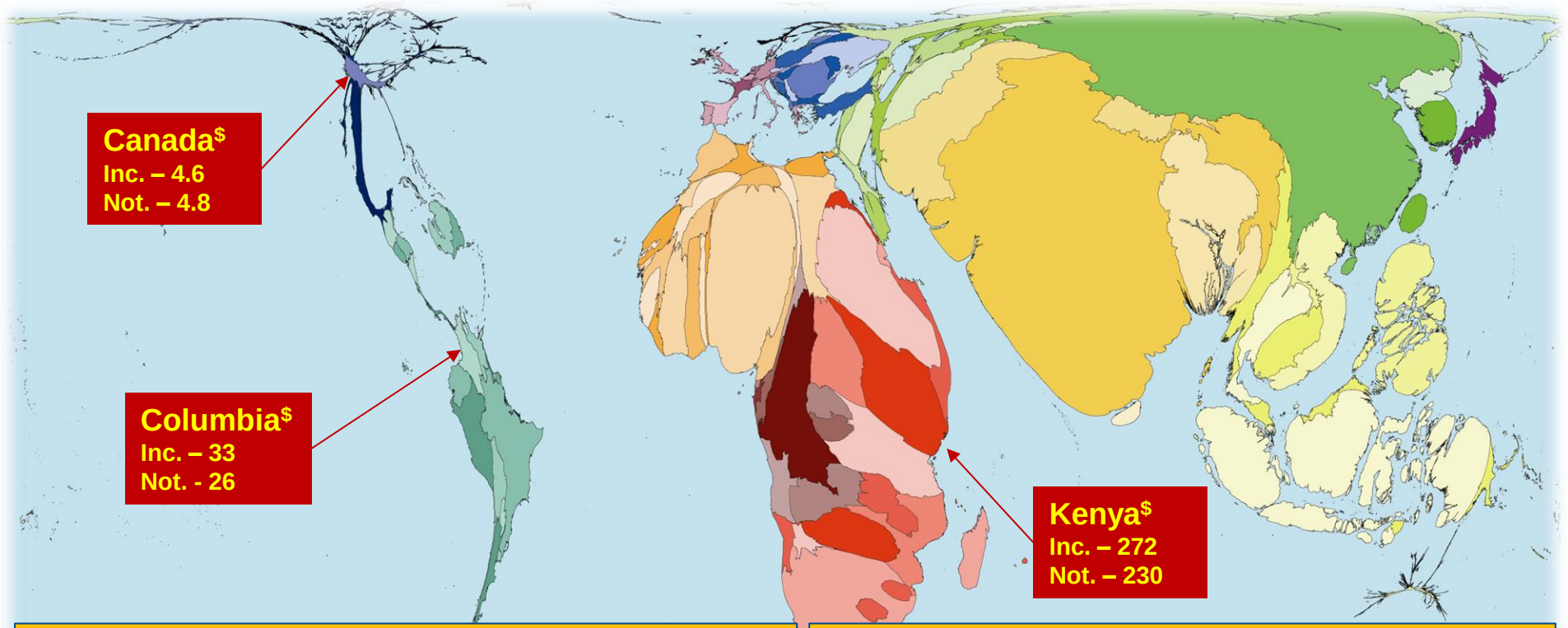
Burden of Tuberculosis: Global and India



Global*:

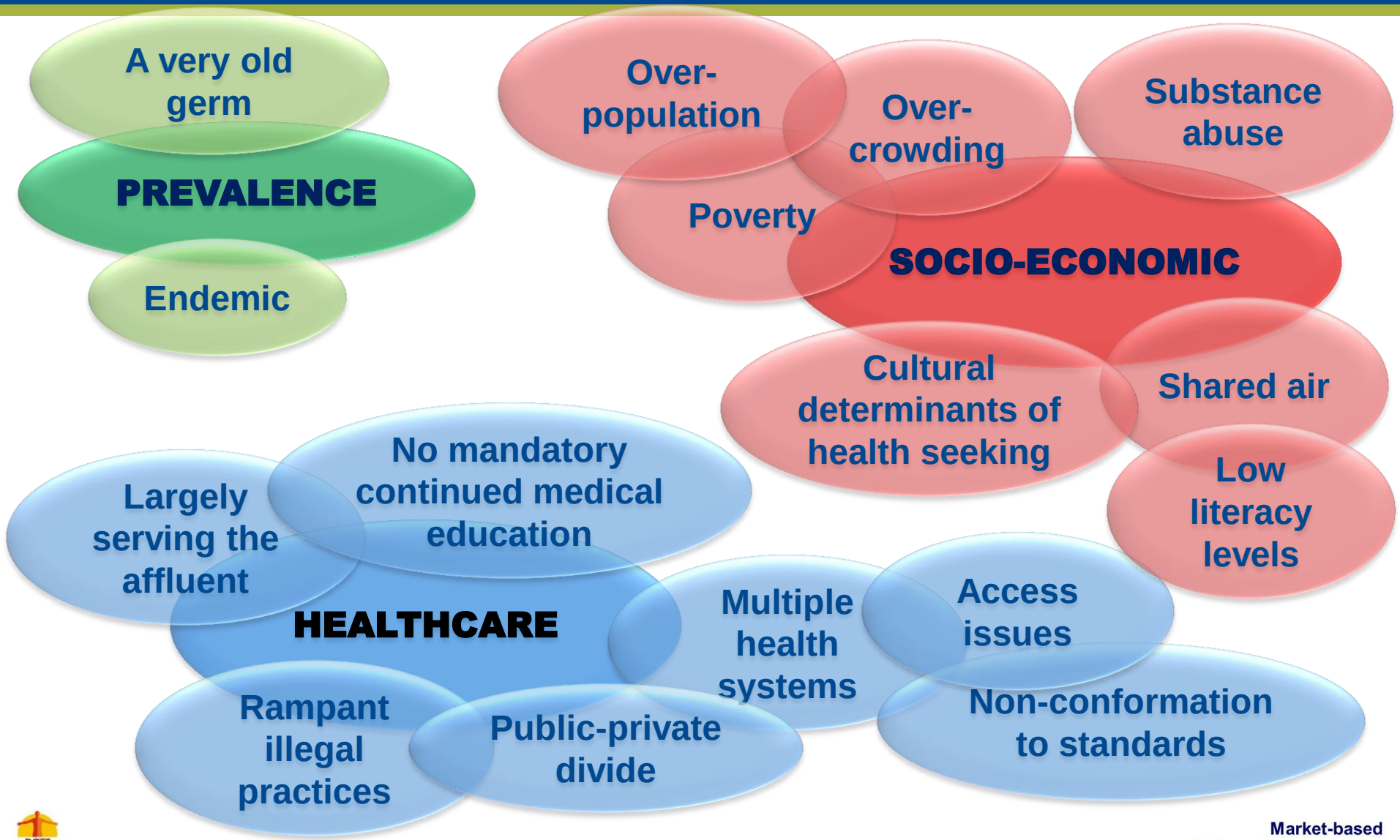
- **Incidence** – 8.6million
- **Deaths** – 1.3 million; 320,000 among HIV+ (3.7%)
- **HIV co-infection** – 1.1 million (13%)
- **MDR-TB**: 450,000; 3.6% of new, 20% of PT TB
- **'Missing' TB Cases**: 2.9 million (34%)

India*:

- **Incidence** – 2.2 million; 26% of global TB
- **Deaths** – 270,000; 42,000 among HIV+ (1.9%)
- **HIV co-infection** – 130,000 (5.9%)
- **MDR-TB**: ?100,000; 2.2% of new & 15% of PT TB
- **'Missing' TB Cases**: 730,000 (33%)

***WHO Global TB Report 2013;* $WHO TB Country Profiles, 2012**

Determinants of the TB Burden?



… *therefore*… the Problems

- Disease
  - Emerging drug-resistance
  - Continued morbidity and mortality
  - Continued high costs; financial and societal burden
- Program design
  - RNTCP was program-centric; not patient-centric
  - Multi-sectoral coordination absent
  - Non-acceptance of RNTCP by dominant private sector

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Revised National Tuberculosis Control program

GOVERNMENT-LED NATIONAL TB PROGRAM

NTP

Governance – weak

Diagnosis – using chest X-ray

Treatment – drug quality and supply, questionable

Adherence – patient not followed up, monitored

Accountability – Weak documentation, reporting

⇨ 1/3rd TB detection
⇨ 1/3rd Treatment success

RNTCP (DOTS)

Governance – strong

Diagnosis – using sputum smear microscopy

Treatment – assured drug quality, supply

Adherence – directly observed treatment

Accountability – robust documentation, reporting

⇨ 2/3rd TB detection
⇨ 4/5th Treatment success

Global and National Priority Approaches

Global (WHO)

1. Reach the ‘missed’ cases
2. Address MDR-TB as a public health crisis
3. Accelerate response to TB-HIV
4. Increase financing to close resource gaps
5. Ensure rapid uptake of innovations

National (Strategic Plan)

1. Ensuring early, improved diagnosis of TB patients
2. Improving access to high-quality treatment
3. Optimal alignment with NRHM
4. Involvement of private sector at scale
5. Continuous QI and accountability

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SHOPS-TB Project: Evolution of Concept

2009

MBPH Project: National scan of public-private mix activities in TB

‘Patient-cycle’ based intervention concept developed

2010

Discussions with CTD, WHO, USAID; selection of geography

Approval from USAID; GoI concurrence

Procurement of ‘Interface Agency’ for Karnataka and Uttar Pradesh

2011

MBPH Interventions started in 2 states (Karnataka and Uttar Pradesh)

Evaluation of Pilots; lessons impact current national strategic plan

2012

SHOPS Project: Advocacy with GoI; discussions with GoKA; model redesign

Procurement of ‘Interface Agency’ for Karnataka

2013

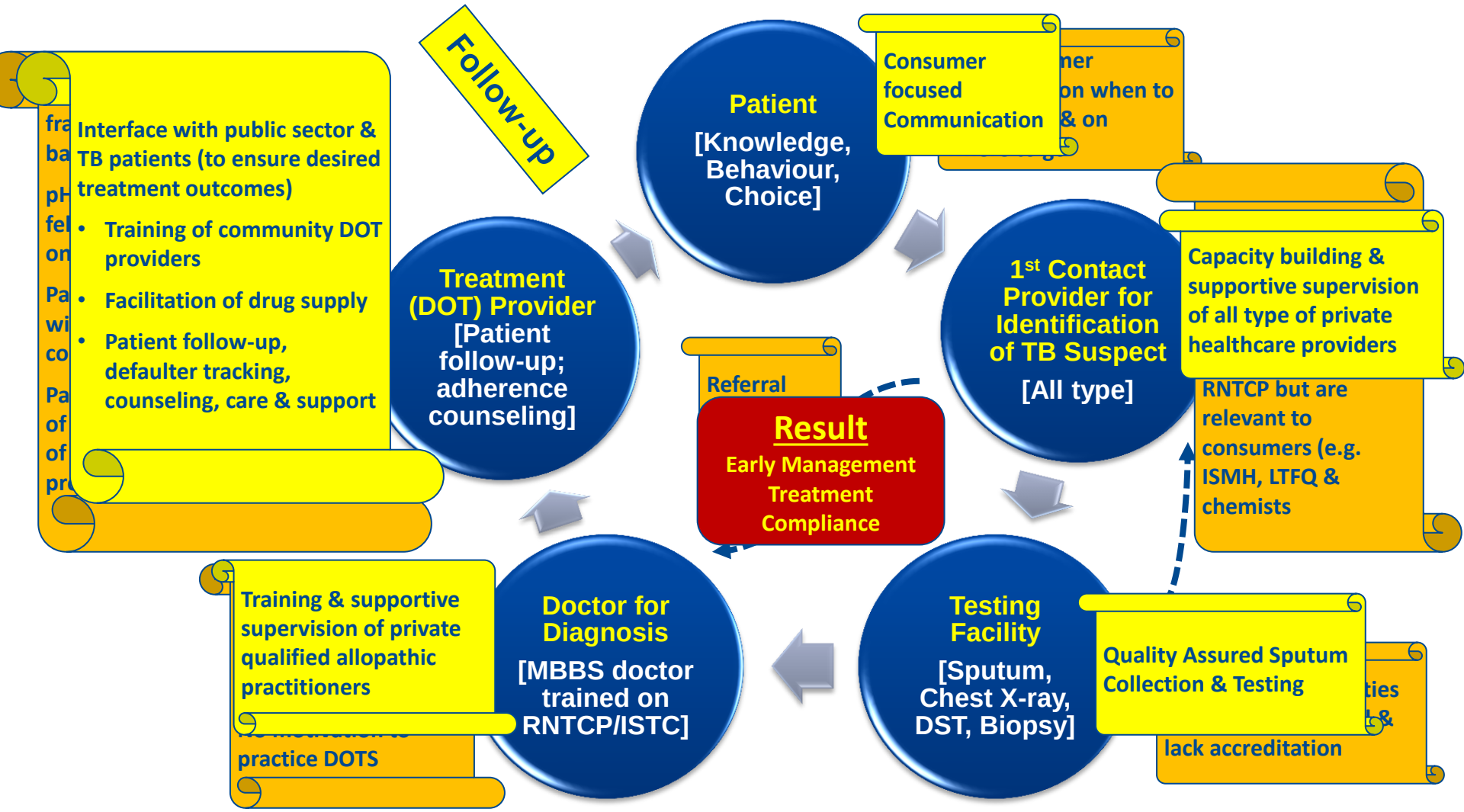
Joint planning by Abt Associates, KHPT and GoKA

SHOPS Intervention started in Karnataka

Selection of Karnataka was based on (low) reported TB detection

SHOPS-TB: 'Patient Cycle' based Concept

GAPS AND SOLUTIONS



SHOPS-TB: Purpose

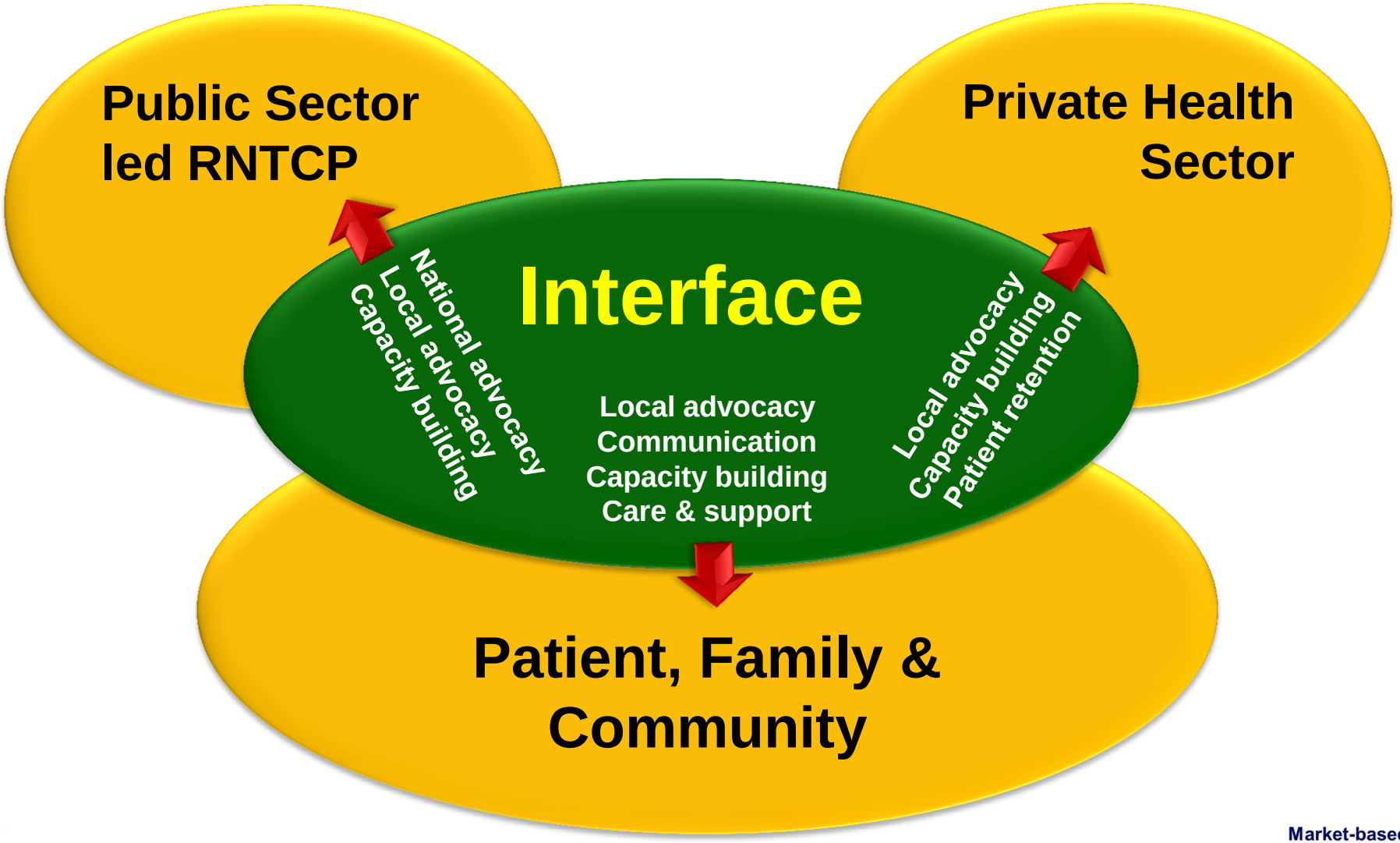
- Increase TB notification
- Early diagnosis and treatment initiation
- Improve treatment outcomes

⇨Reduce risk/spread of drug-resistant TB

⇨Reduce morbidity and mortality

⇨Reduce costs

SHOPS-TB: Model



SHOPS-TB: Process

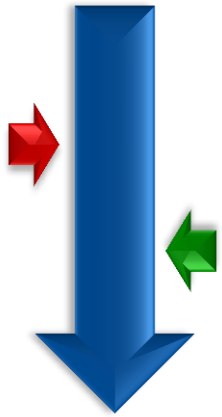
INTERVENTIONS *expected to* DELIVER RESULTS

Current Behaviors:

Most TB symptomatics/patients consult private providers, but are not recommended standard investigations, treatment regimens, and/or appropriate follow-up

Influencing Behavior:

- Advocacy – community; public & private health service sectors
- Communication to improve health-seeking behavior in community
- Capacity building of private providers
- Public-private-community interface



Delivering Services:

- Referral of TB symptomatics
- Sputum collection and transportation
- Care and support through patient home visits
- ICT: telephonic follow-up of TB patients; 'TB Careline'

Desired Behaviors:

All TB symptomatics/patients visiting private providers are recommended evidence-based investigations, standard treatment regimens, and follow-up support, for adherence and prevention of spread of TB

SHOPS-TB: Process

THE 4x4 DRIVE *expected to* SUSTAIN, REPLICATE MODEL

	Seek & Engage	Improve Awareness, Knowledge	Empower; Facilitate Correct Behavior	Strengthen Commitment
Private Health Care Providers	•'Ask' community (TG) •Map by type, facility •Orient if relevant •Engage M/colleges.	•In-clinic or group training (all type) •Medical council accredited CME	•Clinic visit support •Exchange forums •ICT-aided support •Facilitate notification	•Institutionalization •Advocacy by peers •Evident value
Target Community: Consumers	•List slums & MARP •Slum 'entry'; KOL •Slum mapping	•Communication activities: IPC, small & large group meetings, events	•'Empowering' health-seeking & referral of TB symptomatics	•KOL engagement •Reinforced messages with evidence
TB Patients & Affected Persons	•Identify affected persons - In community - At pHCP clinics	•Patients receive correct information and choices from service provider	•Sputum collection & transportation •Peer group support •Counseling	•Treatment support (in-person, ICT, medical care) •Counseling
RNTCP Managers & Services	•List RNTCP & public health facilities •Map by type, facility	•Engage, orient, train NTP managers/FLW	•Continuous engage-ment of RNTCP FLW •Showcase benefits to RNTCP managers	•Advocacy: - State (MoH/NTP) - National (CTD)

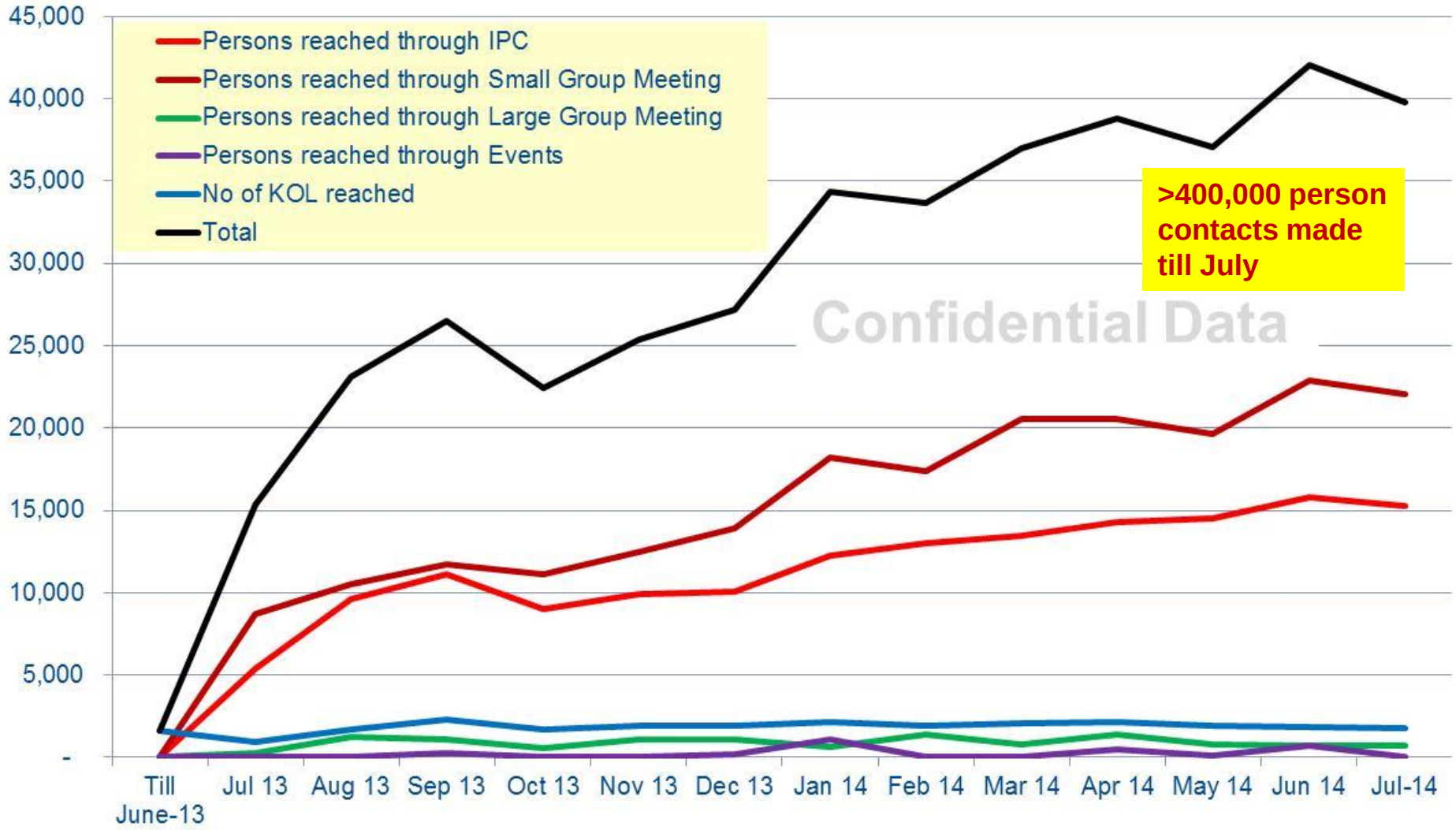
SHOPS-TB: Indicators of Success

S No	Indicator	Status
1*	⇧ in number of chest symptomatics (CS) tested	By EoP
2#	Number of CS benefitting from sputum collection and transportation	Interim
3*	⇧ in number of TB patients notified to RNTCP	By EoP
4#	⇩ In reported delay in TB diagnosis and initiation of treatment	By EoP
5#	Treatment compliance among TB patients	Interim
6#	Determination of solution packages for adoption of TB management guidelines by qualified private health care providers	Done
7#	Factors influencing acceptance of RNTCP protocols by TB patients	By EoP

Source: RNTCP records; #Source: SHOPS MIS records, surveys

SHOPS-TB: Interim Results… 1/5

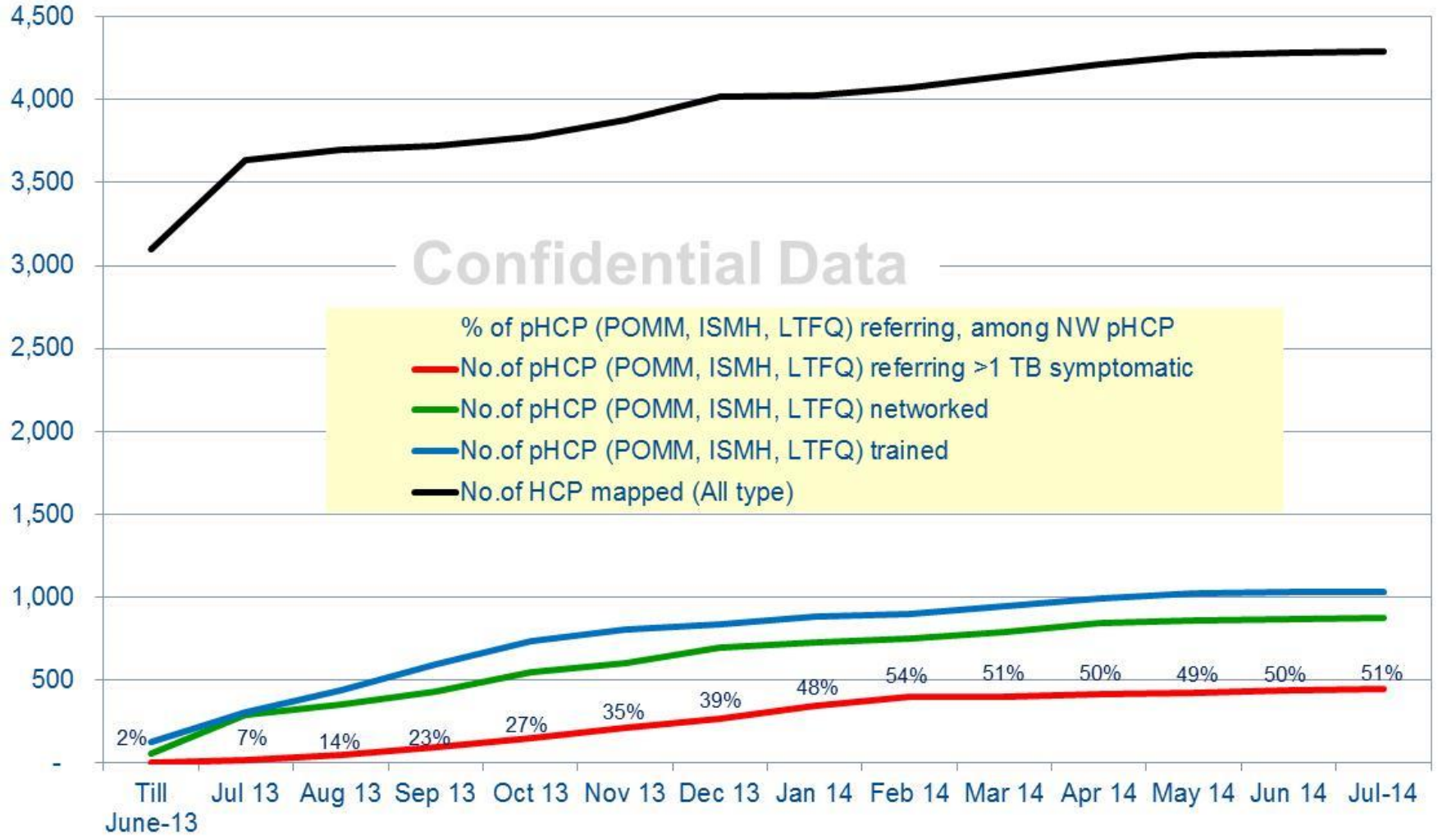
COMMUNICATION [EACH MONTH]



Market-based Partnerships for Health

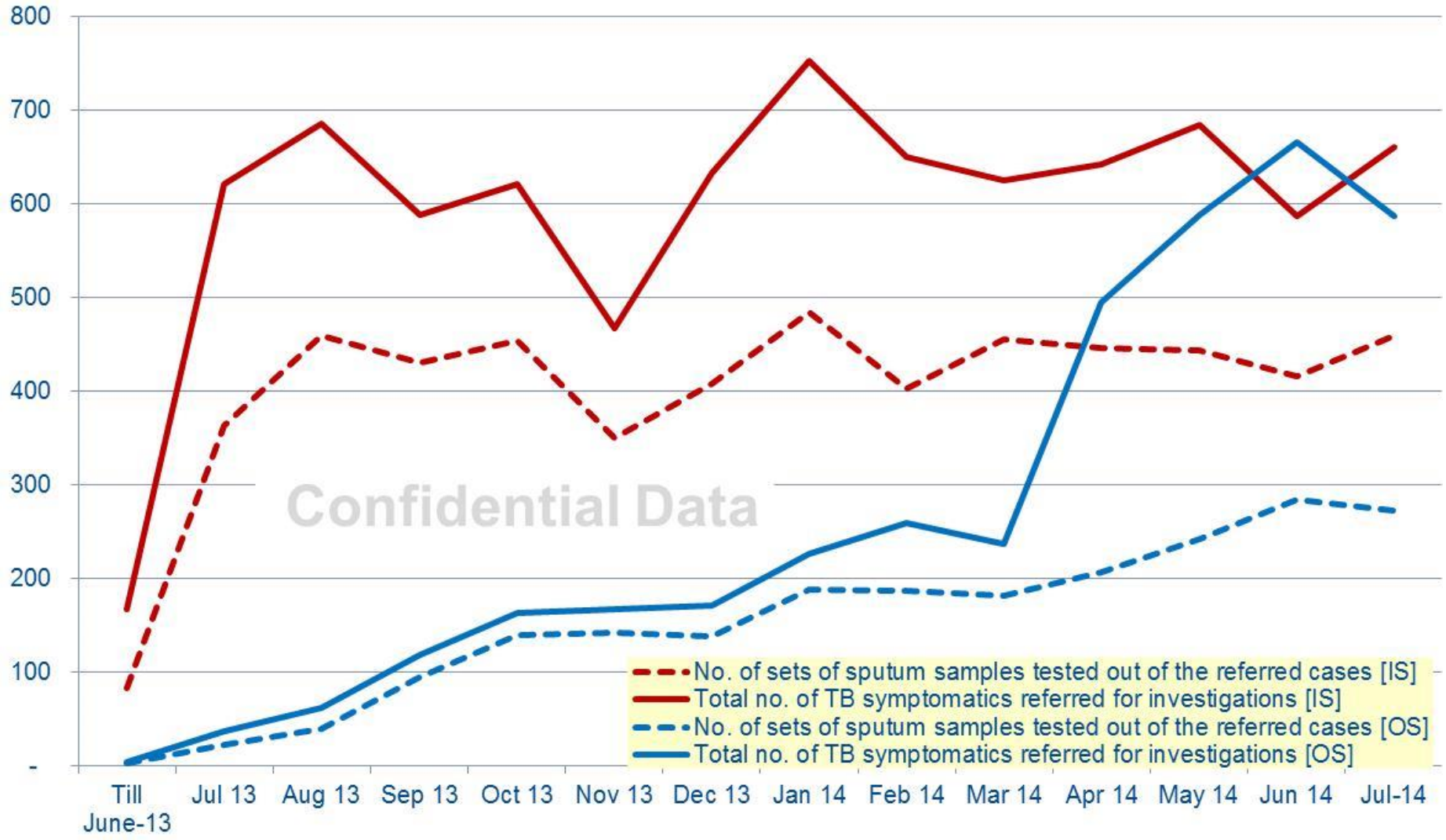
SHOPS-TB: Interim Results… 2/5

PRIVATE HEALTH CARE PROVIDER ENGAGEMENT [CUMULATIVE]



SHOPS-TB: Interim Results… 3/5

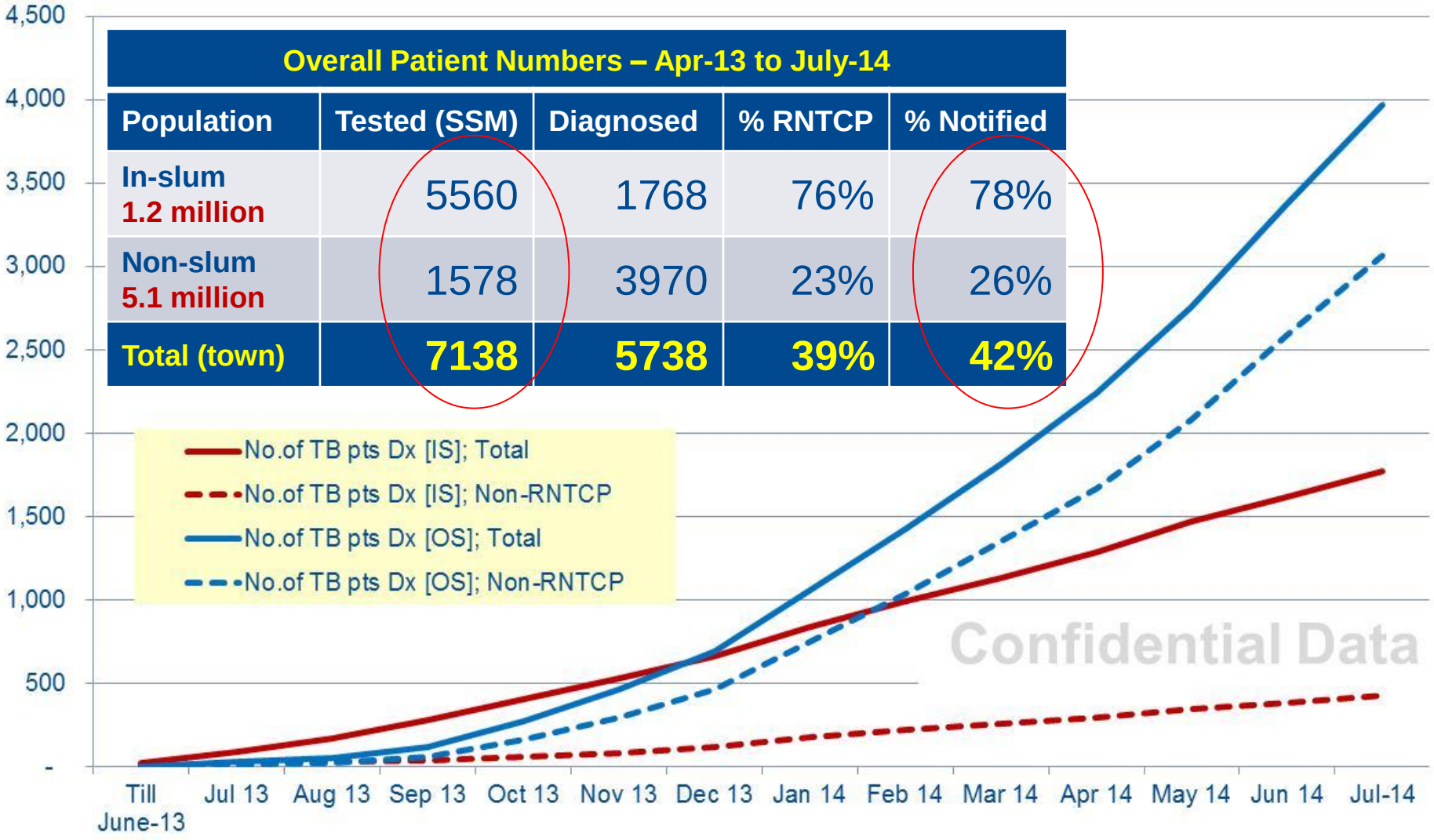
REFERRAL FOR SPUTUM TEST, TESTS DONE [EACH MONTH]



SHOPS-TB: Interim Results… 4/5

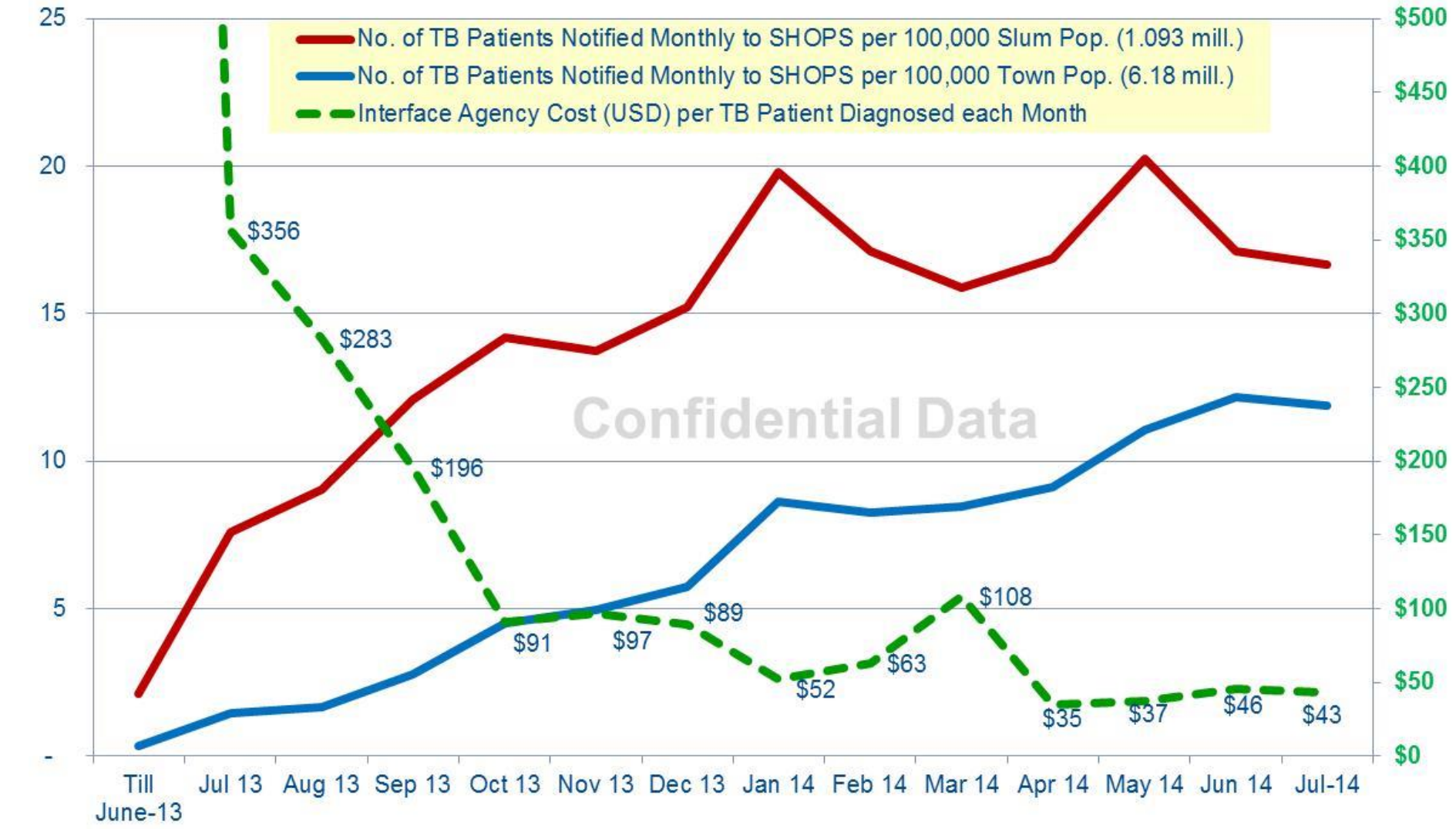
TB DIAGNOSIS, NOTIFICATION [CUMULATIVE AND TOTAL]

Overall Patient Numbers – Apr-13 to July-14				
Population	**Tested (SSM)**	**Diagnosed**	**% RNTCP**	**% Notified**
In-slum 1.2 million	5560	1768	76%	78%
Non-slum 5.1 million	1578	3970	23%	26%
Total (town)	**7138**	**5738**	**39%**	**42%**



SHOPS-TB: Interim Results… 5/5

TB NOTIFICATION TO SHOPS [EACH MONTH]



Market-based Partnerships for Health

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QI: Based on Information Collected, Analyzed

- **Program MIS; periodic evaluation**
- Period visits/discussions with:
  - Patients and their family members
  - Key community opinion leaders
  - Private health care providers
  - RNTCP program managers and front line workers
- Engagement of field-level staff in decision making
- Adapting to national needs, changes
- Review of emerging data, results

11,312 cells!
1 of 36 sheets in the Indicator Report

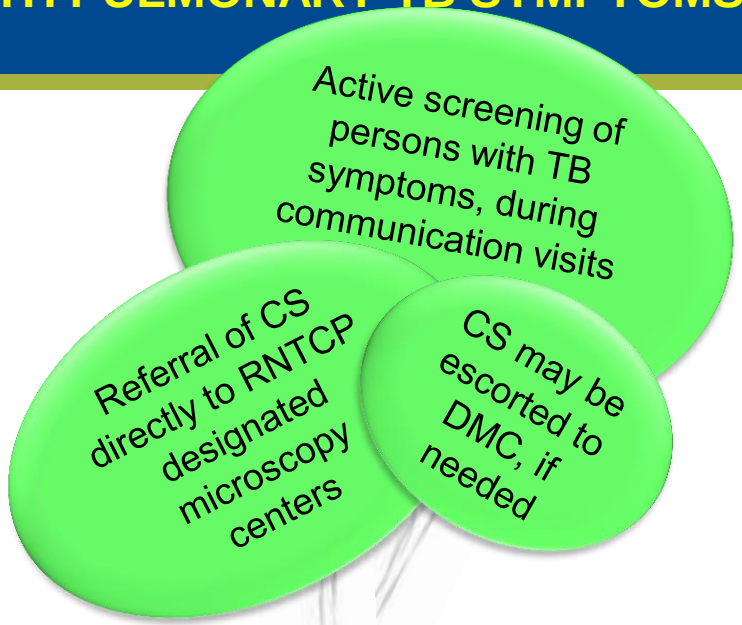
Program Quality Improvement

SOME OF THE PROBLEMS WE FACED UNDER MBPH *and* SHOPS

Group	Problem
Community, person with symptoms	Persons with chest TB symptoms (CS) do not go for sputum smear microscopy (SSM) to certified labs
Private health care provider	Few CS are referred for SSM by private health care providers (pHCP)
Private health care provider	Only 50% of networked pHCP known to refer patients for diagnosis, follow up care; adherence to standards
Patient, family	Multiple care and support issues (DOT, stigma, unaddressed concerns of patients and family)
Patient	Care and support of patients managed by pHCP outside intervention slums

Program Quality Improvement… 1/5

COMMUNITY, PERSONS WITH PULMONARY TB SYMPTOMS

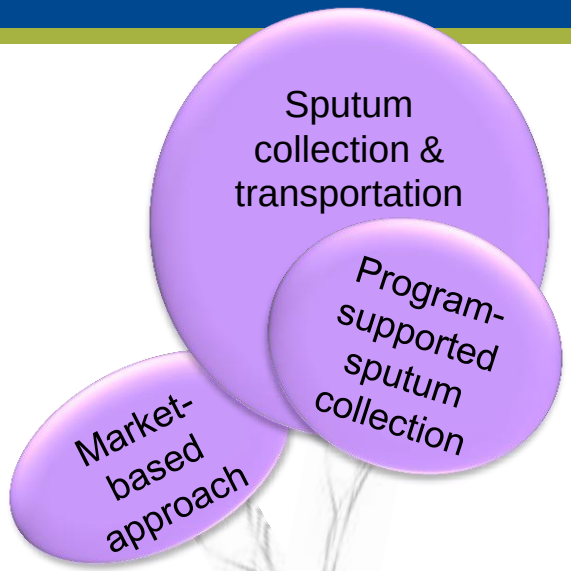


Self-efficacy

Persons with chest TB symptoms (CS) do not go for sputum smear microscopy (SSM) to certified laboratories

Program Quality Improvement… 2/5

PRIVATE HEALTH CARE PROVIDERS

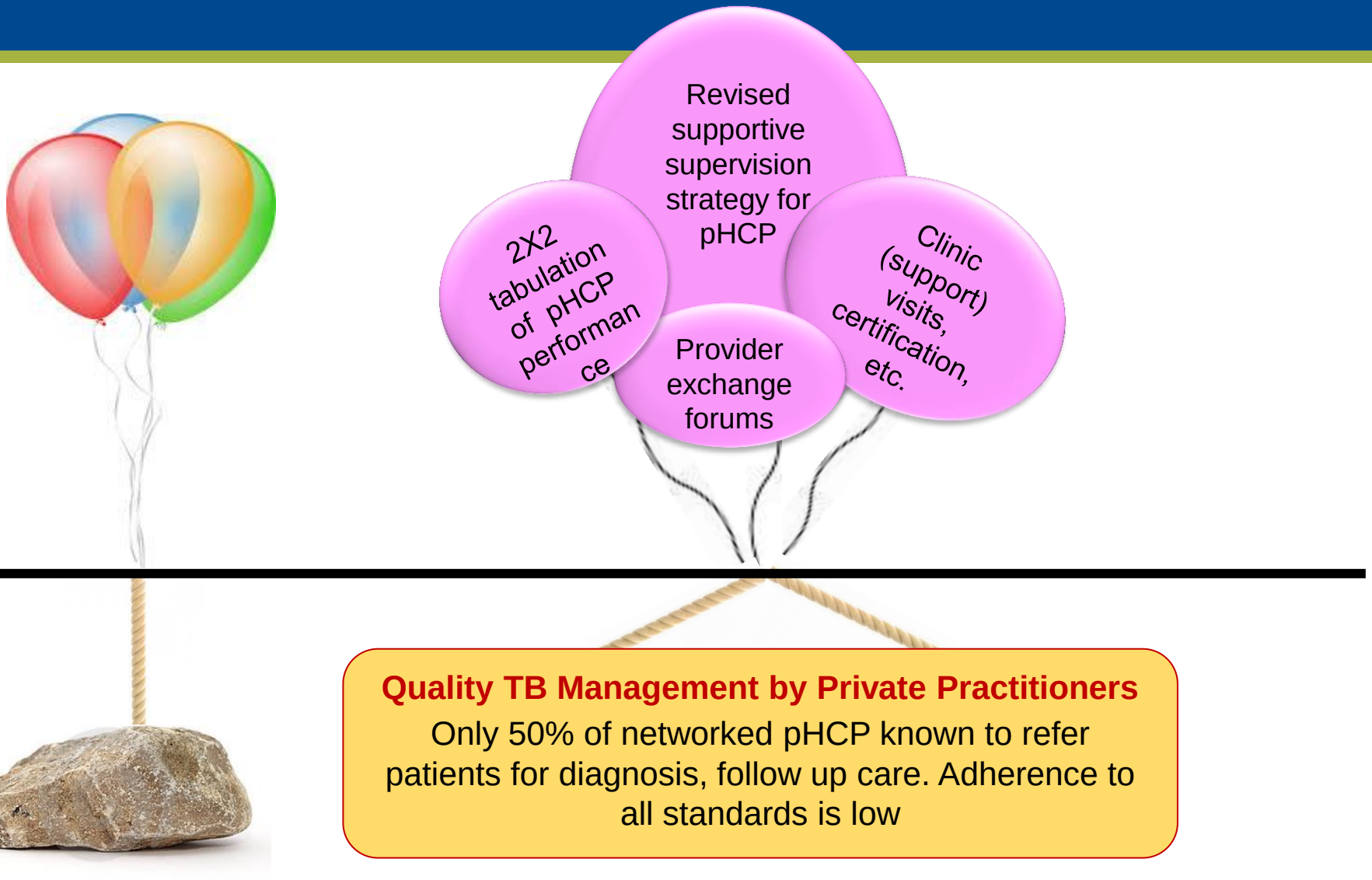


Access to Diagnosis

Few CS are referred for SSM by private health care providers (pHCP)

Program Quality Improvement… 3/5

PRIVATE HEALTH CARE PROVIDERS

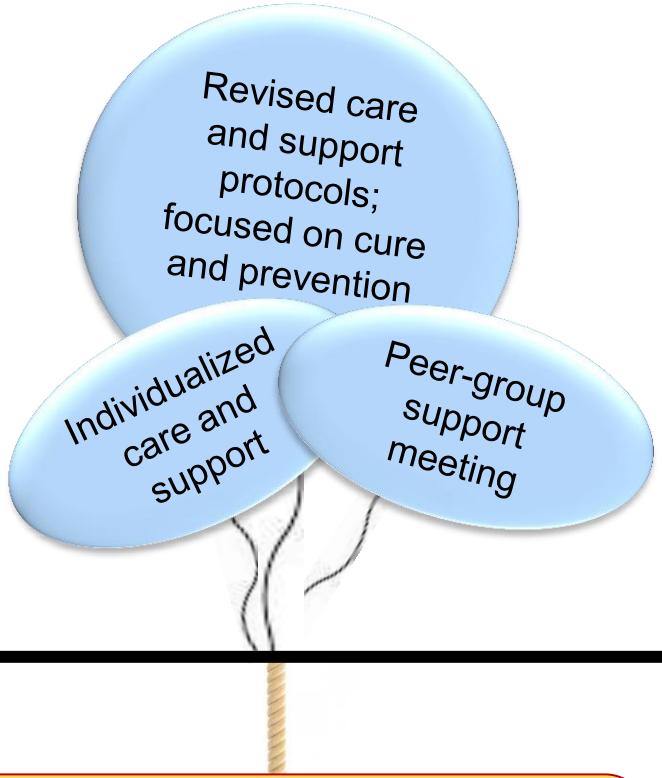


Quality TB Management by Private Practitioners

Only 50% of networked pHCP known to refer patients for diagnosis, follow up care. Adherence to all standards is low

Program Quality Improvement… 4/5

PATIENT AND FAMILY

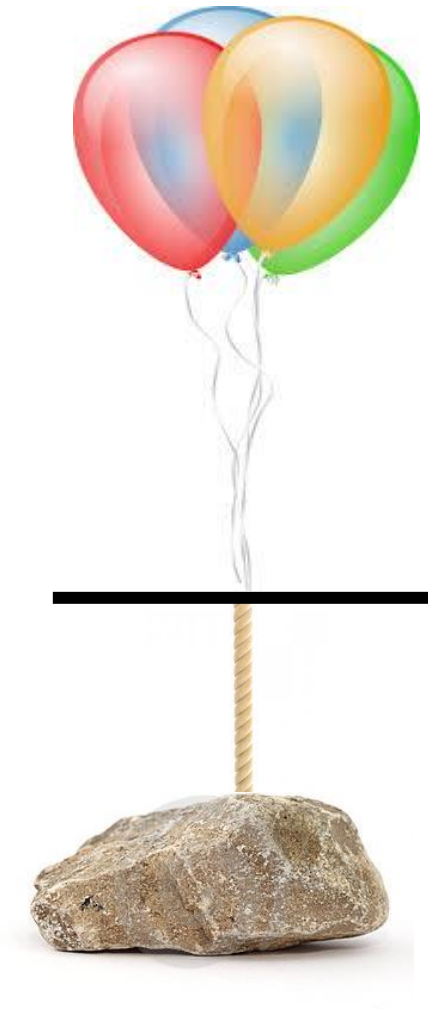


Availability of Care and Support

Multiple care and support issues (DOT, stigma, unaddressed concerns of patients and family)

Program Quality Improvement… 5/5

PATIENT AND FAMILY



Careline
providing telephonic support to patients who (a) prefer not to have, or (b) cannot receive, in-person C & S

Access to Care and Support

C&S of patients managed by private health care providers and who live outside the reach of program staff (out-of-intervention slums

The next generation may receive the highest standards of care & support from healthcare providers of their choice

Photo Credit: O George

Disclaimer
This presentation is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States government.

Were the Objectives Achieved?

- The ‘uninitiated’ learn a little about tuberculosis (TB)
- Know the burden of TB and its implications
- Learn the concept of SHOPS-TB – Why? How?
- Understand the SHOPS-TB model
- Learn about the intervention

  … and its results
- Know about the key issues which influenced quality improvement (QI) of the SHOPS project