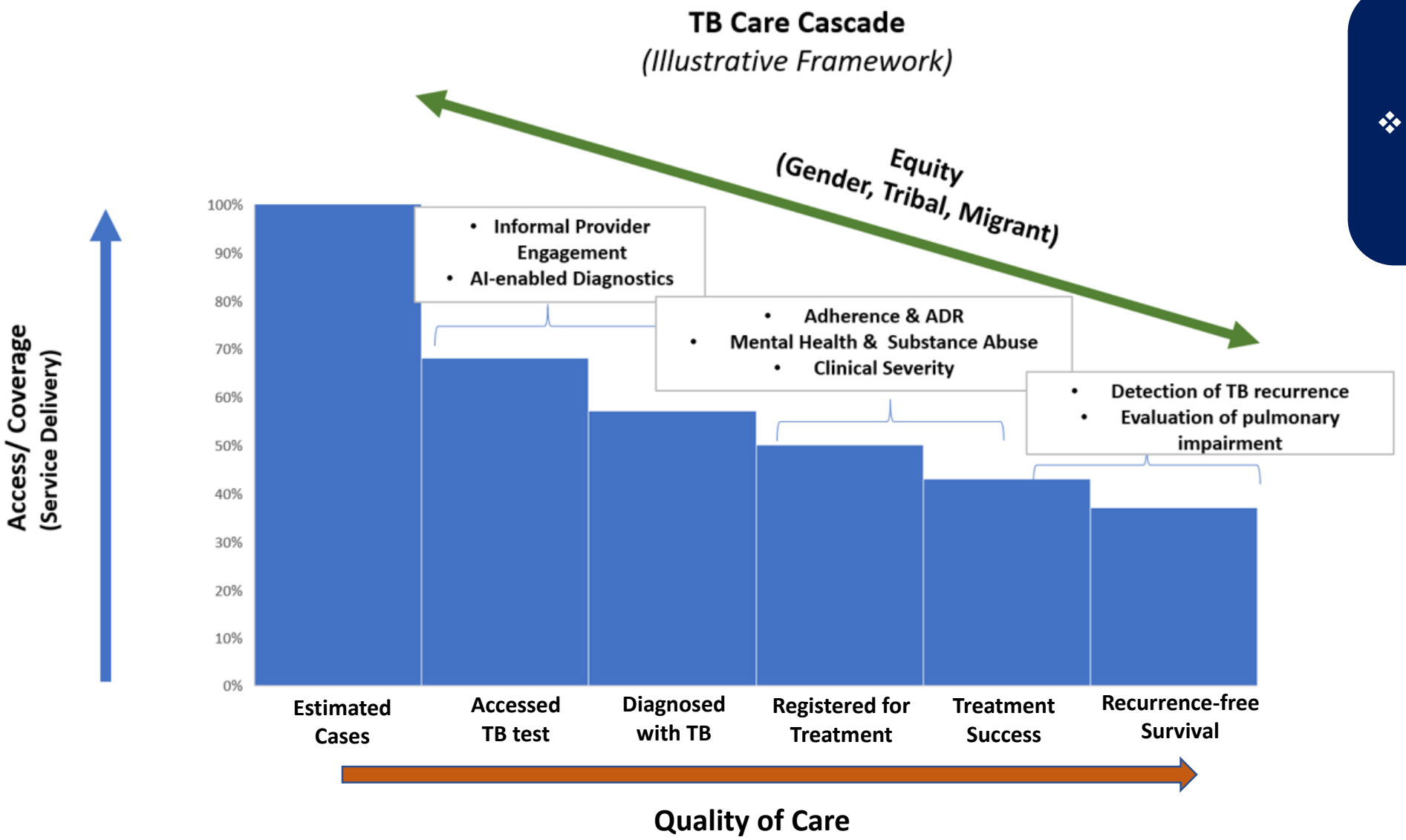
Closing the Gaps in TB Care Cascade (CGC)

Post-Treatment Follow-Up
(Data updated from Oct'20 to Jan'22)

Care Cascade Framework



Quality Improvement:

- Iteration of interventions to optimize access, quality, and equity of care

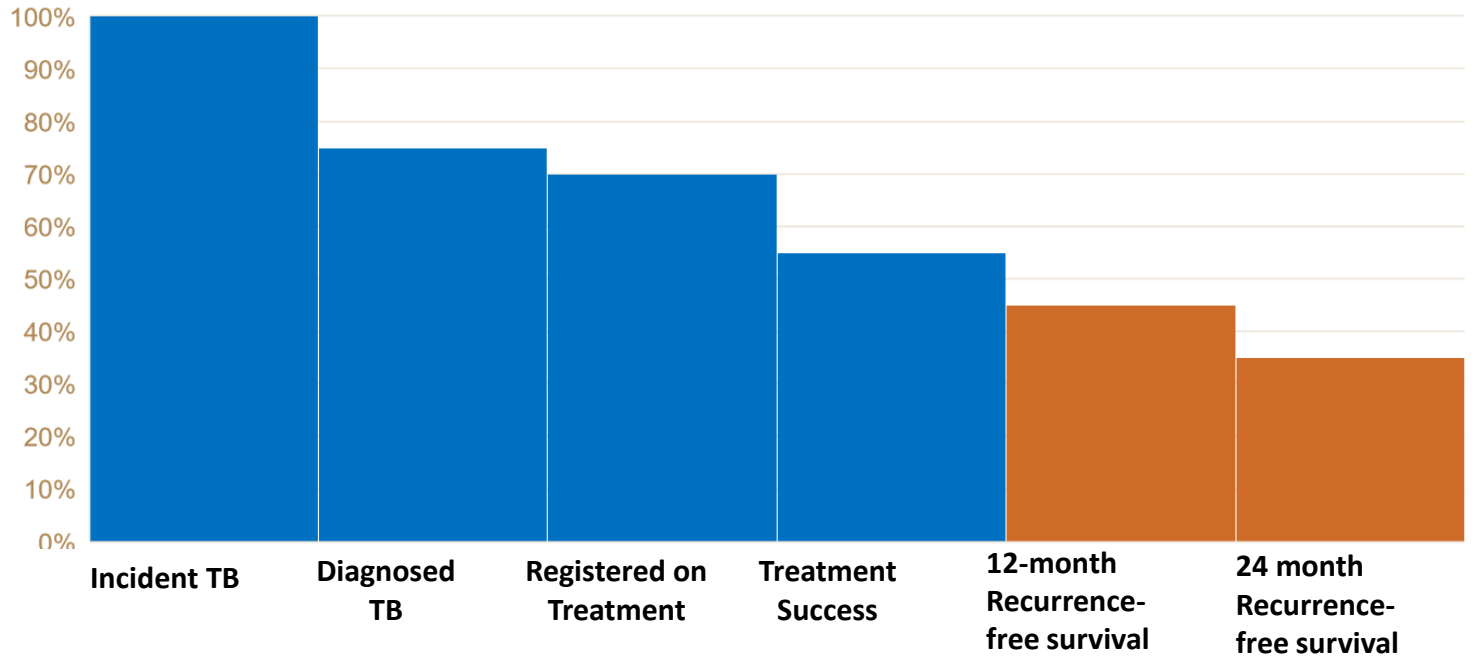
Long-Term Follow-up

Guidance: Post-treatment follow-up to be conducted at 6, 12,18, 24 months post successful treatment

Geographies: Ahmedabad, Gandhinagar, Surat (Gujarat) ; Ranchi, East Singhbhum (Jharkhand)

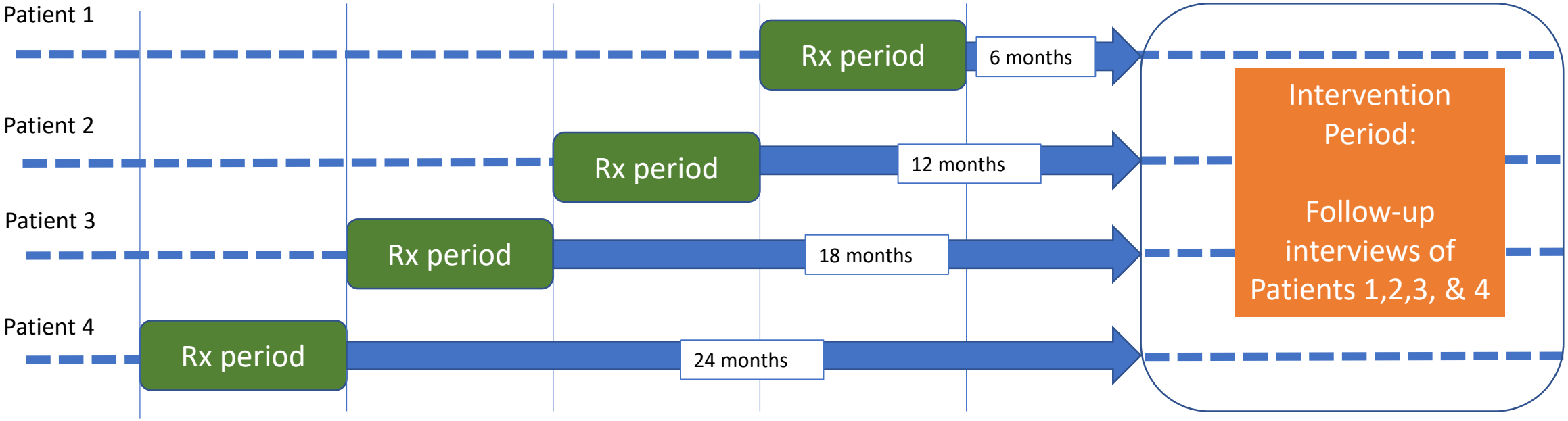
Objectives:

- Early detection of TB recurrence
- Assessment of post-treatment case fatality
- Develop Nikshay requirements and workflows for scale-up
- Extend TB care cascade *to Recurrence –free survival* as an outcome measure

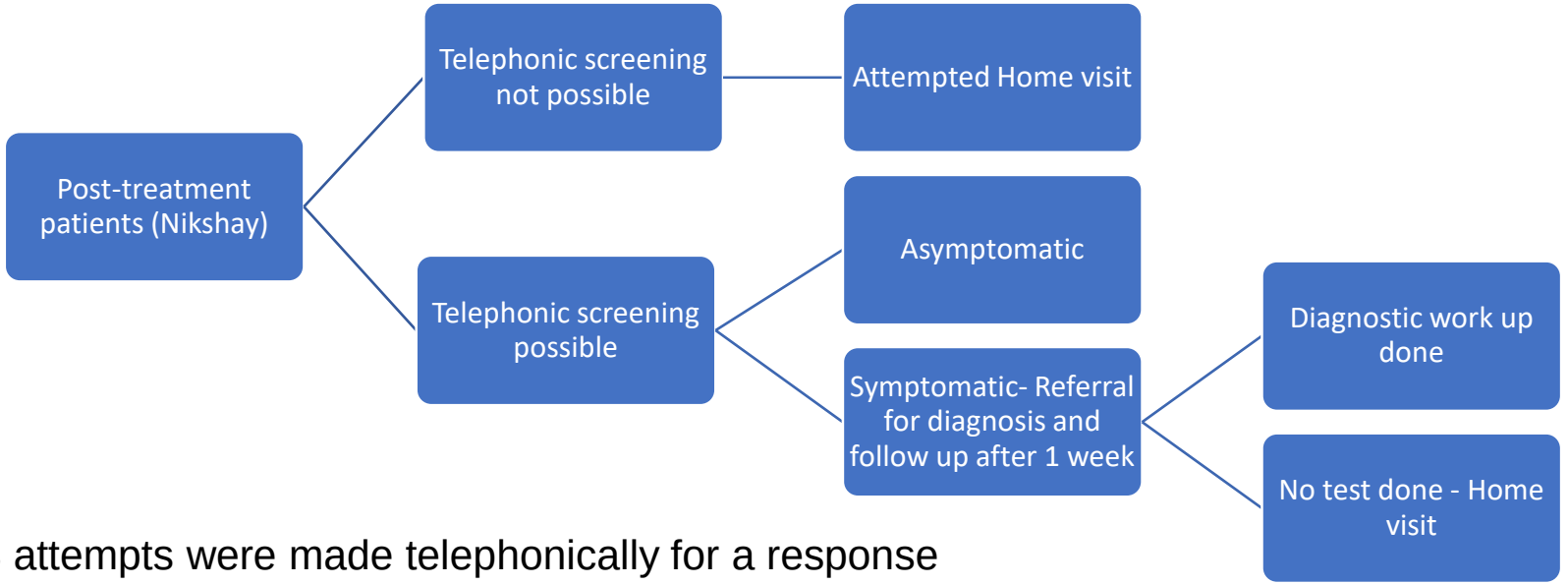


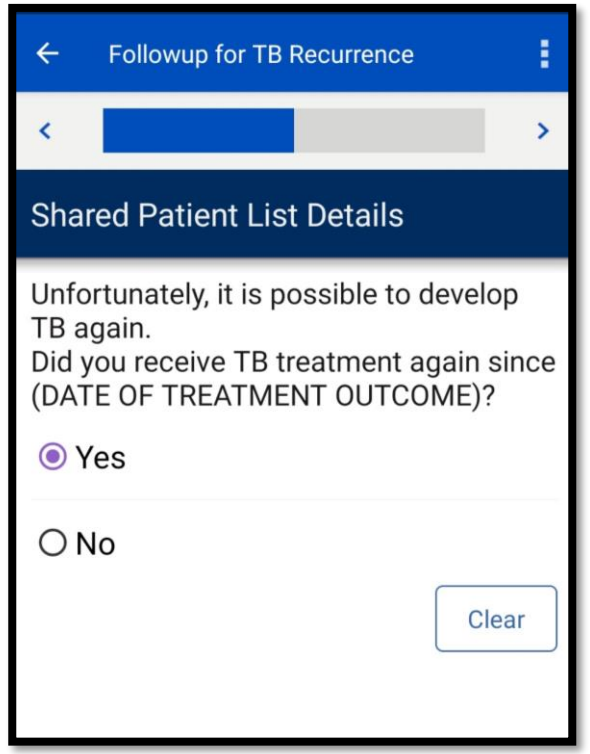
Long-Term Follow-up: Selection of patients

- Patients who have completed 6, 12,18, 24 months post successful treatment were followed-up telephonically
  - ❑ All four follow-up intervals were followed-up on simultaneously
  - ❑ Each cohort of 6, 12, 18, 24 month consisted of different/unique patients
  - ❑ Subset of patients were eligible for follow-up in multiple time intervals (i.e. 6&12; 12&18; 18&24)



Long-Term Follow-up: Workflow

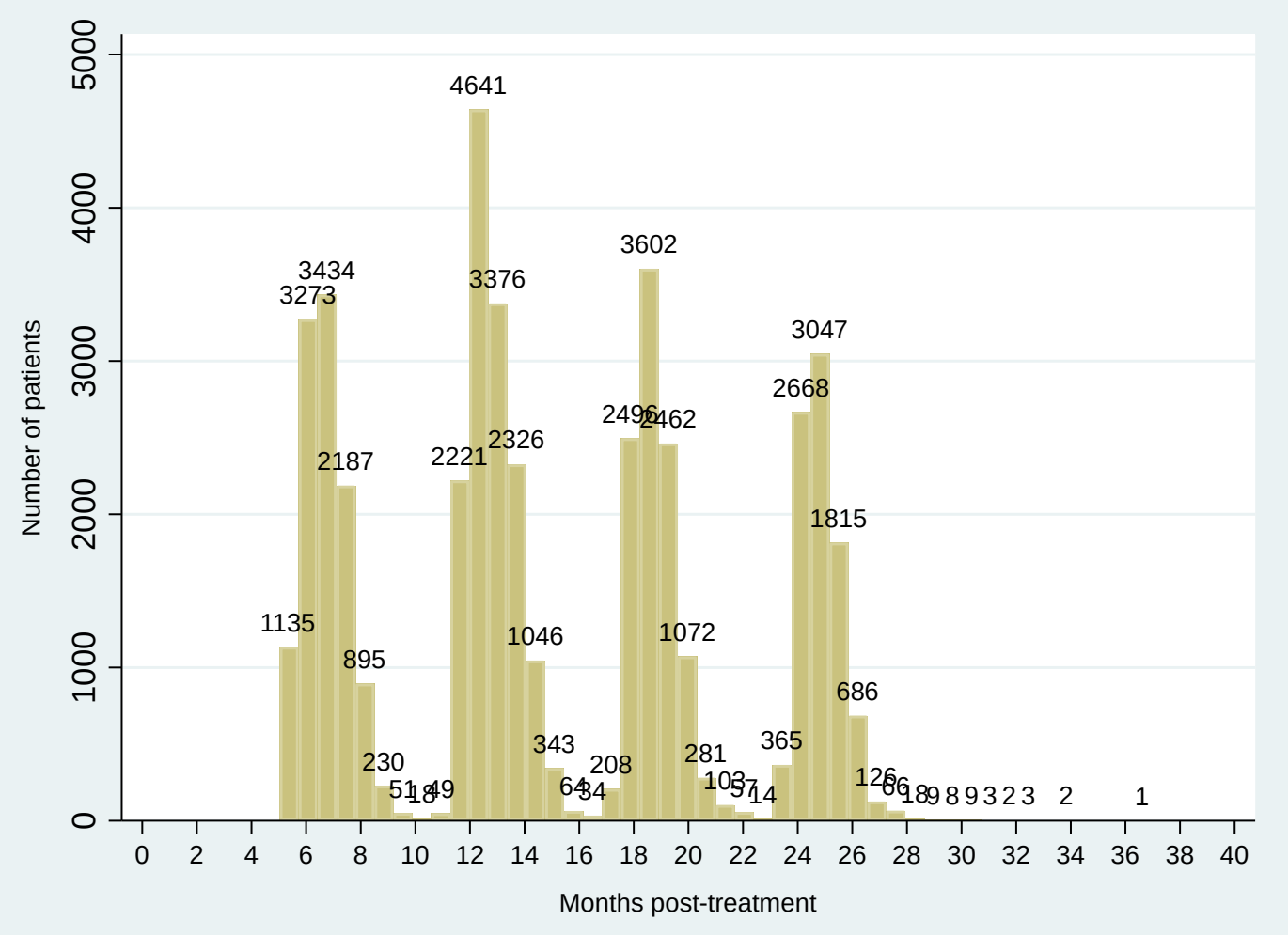




Data collected in a custom mobile application by CGC staff

- 3 attempts were made telephonically for a response
- Patients / Relatives were interviewed on:
  - ❑ TB recurrence or death experienced post treatment (of episode being followed up on)
  - ❑ Experience of TB symptoms currently (symptomatic screening)
  - ❑ *Subset of families were interviewed for details of death (date/cause of death)*
- Symptomatic patients were referred for diagnostic testing as per guidelines
- Follow-up calls made to symptomatic patients to update diagnostic test results and identify TB recurrence

Post-Treatment Follow-Up Period



Post-treatment follow-up interval	No. attempted	Mean follow-up period (months)
6 month	13,493	7.6
12 month	13,273	13.6
18 month	9,694	19.4
24 month	7,986	25.0

Sample Description

- **Total Patient Follow-ups Completed: 56,894**

- **Respondent Sample**: 44,450 (78% response rate)

Sample Category	Number of cases (Gujarat)	Number of cases (Jharkhand)	Total Number of cases
Total respondent	24,918	19,532	44,450
Retreatment	4,512 (18%)	1,208 (6%)	5,720 (13%)
DR-TB	660 (3%)	184 (1%)	844 (2%)
Extrapulmonary	7,816 (31%)	4,122 (21%)	11,938 (27%)
Microbiologically Confirmed	13,052 (52%)	8,737 (45%)	21,789 (49%)
Female	9,526 (38%)	7,295 (38%)	16,821 (38%)
Private Sector	5,653 (23%)	6,915 (36%)	12,568 (29%)
Pediatric	1,495 (6%)	1,026 (5%)	2,521 (6%)

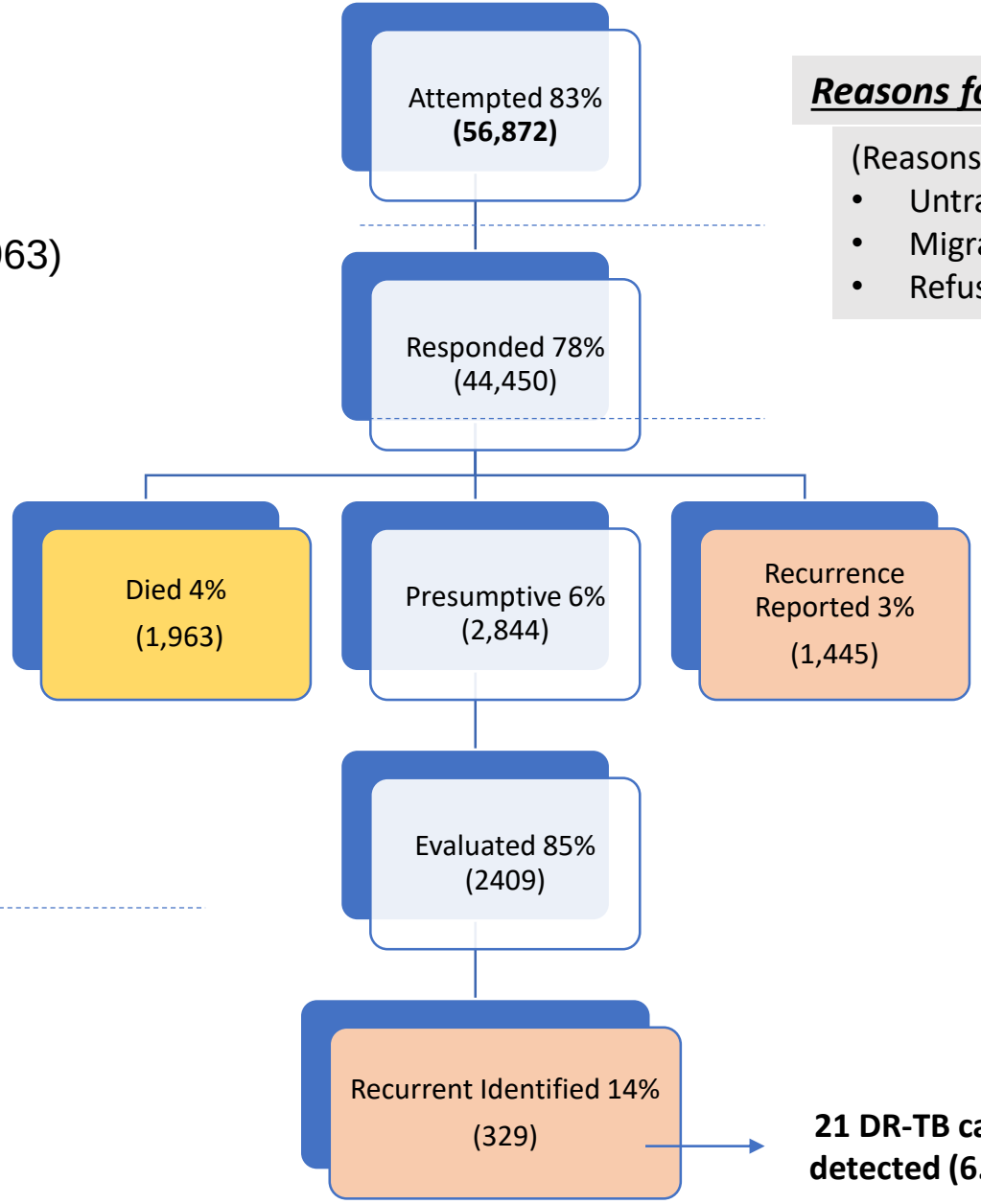
- **Mean duration of post-treatment follow-up**: 15.6 months

Long-Term Follow-Up: Overall

Oct 2020 – Jan 2022

Recurrence: **4.0%** (1,774)
Post-treatment case fatality: **4.4%** (1,963)

Recurrence-free survival: **92%**
Contribution to total notified cases of intervention districts**: 1%**



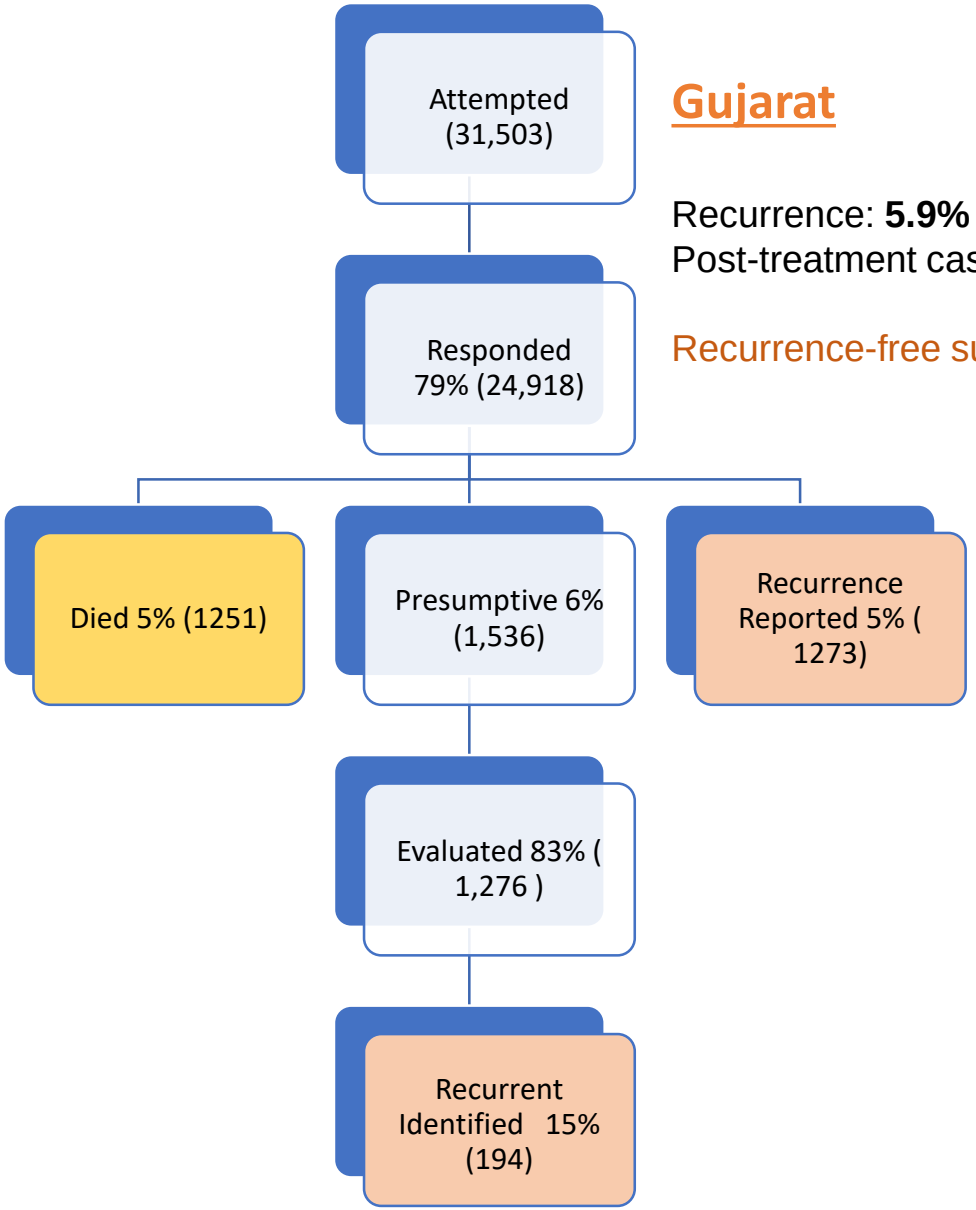
Reasons for drop-off

(Reasons for no response)
- Untraceable
- Migrated/Out of district
- Refused

- Major reason: No symptoms (subsequently)
- Other reasons: Out of pocket expenditure, *Non-functional DMC, COVID, Unavailability of LT at time of visit, Distance between patient's home and PHI*

21 DR-TB cases detected (6.4%)

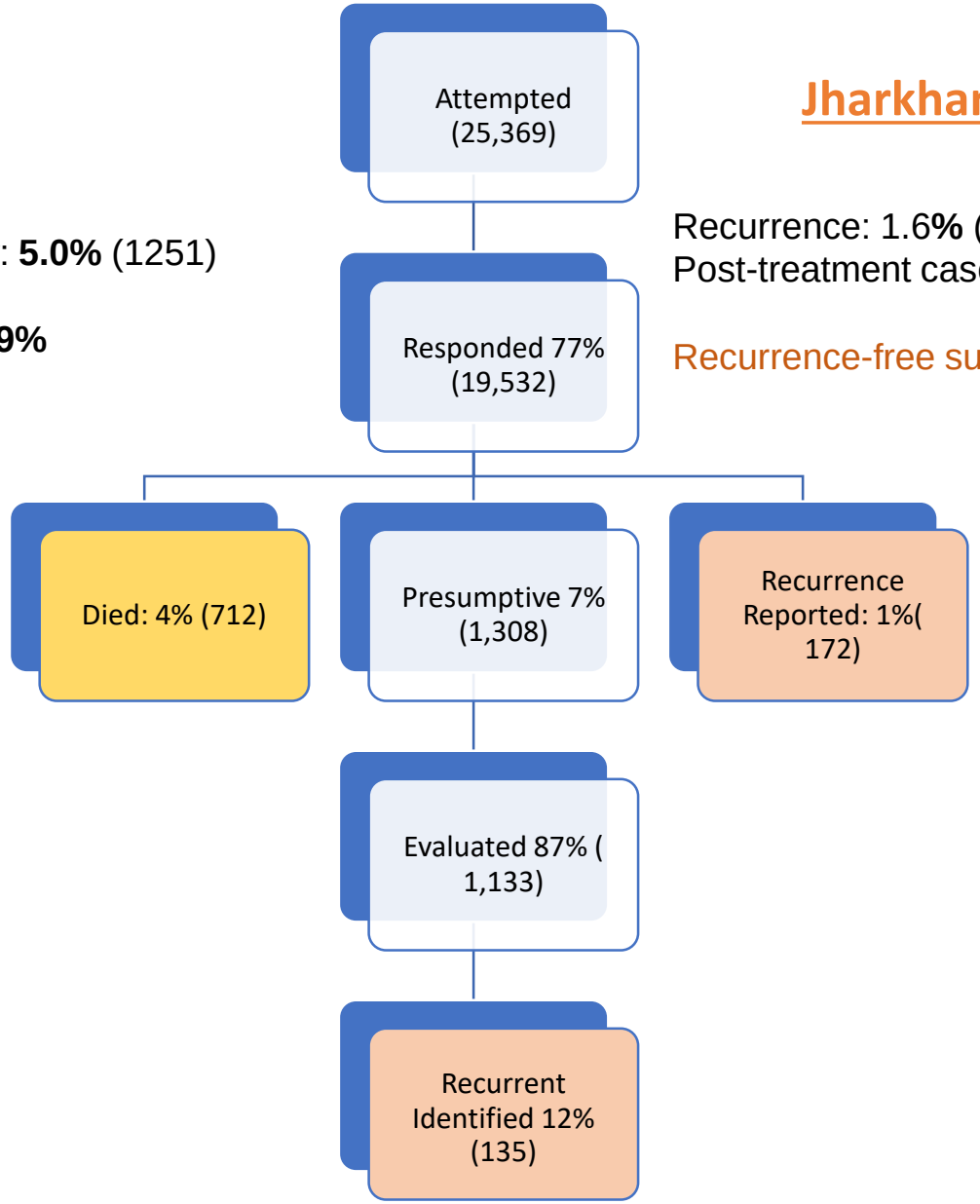
Long-Term Follow-Up: by State



Gujarat

Recurrence: **5.9%** (1,467)
Post-treatment case fatality: **5.0%** (1251)

Recurrence-free survival: **89%**



Jharkhand

Recurrence: 1.6**%** (307)
Post-treatment case fatality: 3**.6%** (712)

Recurrence-free survival: **95%**

TB Recurrence and Case Fatality *by State*

	Recurrence	
Interval of follow-up (post-treatment)	**Gujarat**	**Jharkhand**
6 month	7.2% (N=7442)	1.7% (N=6051)
12 month	5.3% (N=8133)	1.6% (N=5142)
18 month	5.4% (N=5254)	1.6% (N=4442)
24 month	4.6% (N=4089)	1.3% (N=3897)

Gujarat: 5.9%

Jharkhand: 1.6%

- Relapse vs. Reinfection are not distinguished
- Higher recurrence attributed to higher incidence

PT% 2020:
18% in Gujarat
6% in Jharkhand

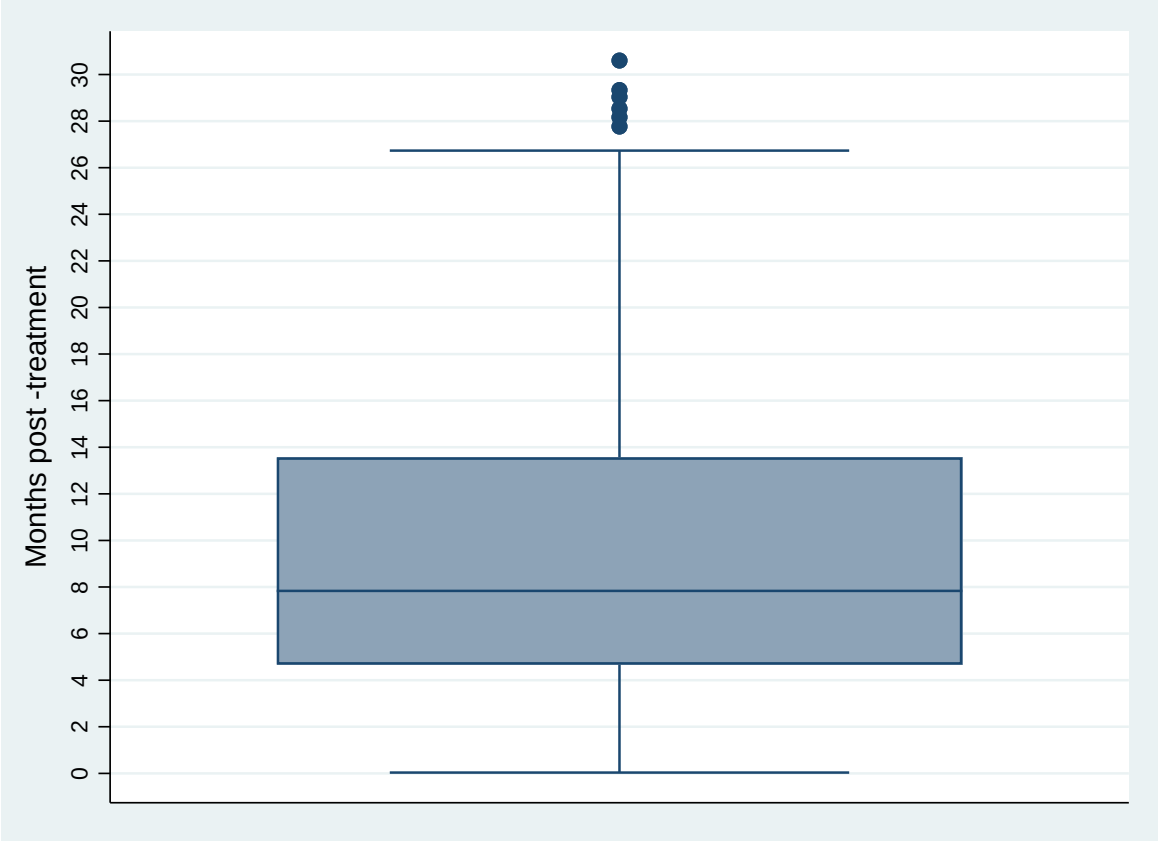
	Post-treatment Case Fatality	
Interval of follow-up (post-treatment)	**Gujarat**	**Jharkhand**
6 month	4.0%	2.9%
12 month	4.6%	3.3%
18 month	5.6%	4.3%
24 month	6.9%	4.5%

Gujarat: 5.0%

Jharkhand: 3.6%

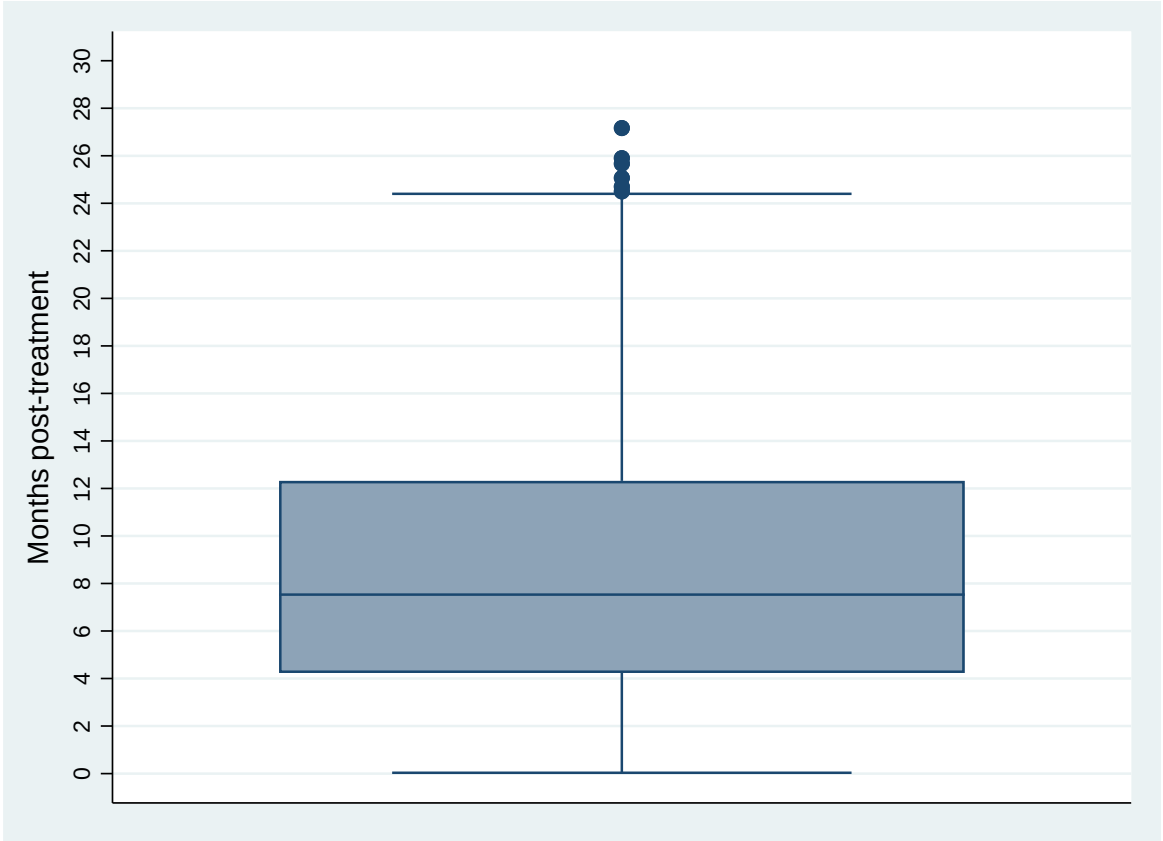
- Comparable post-treatment case fatality

Time to Recurrence



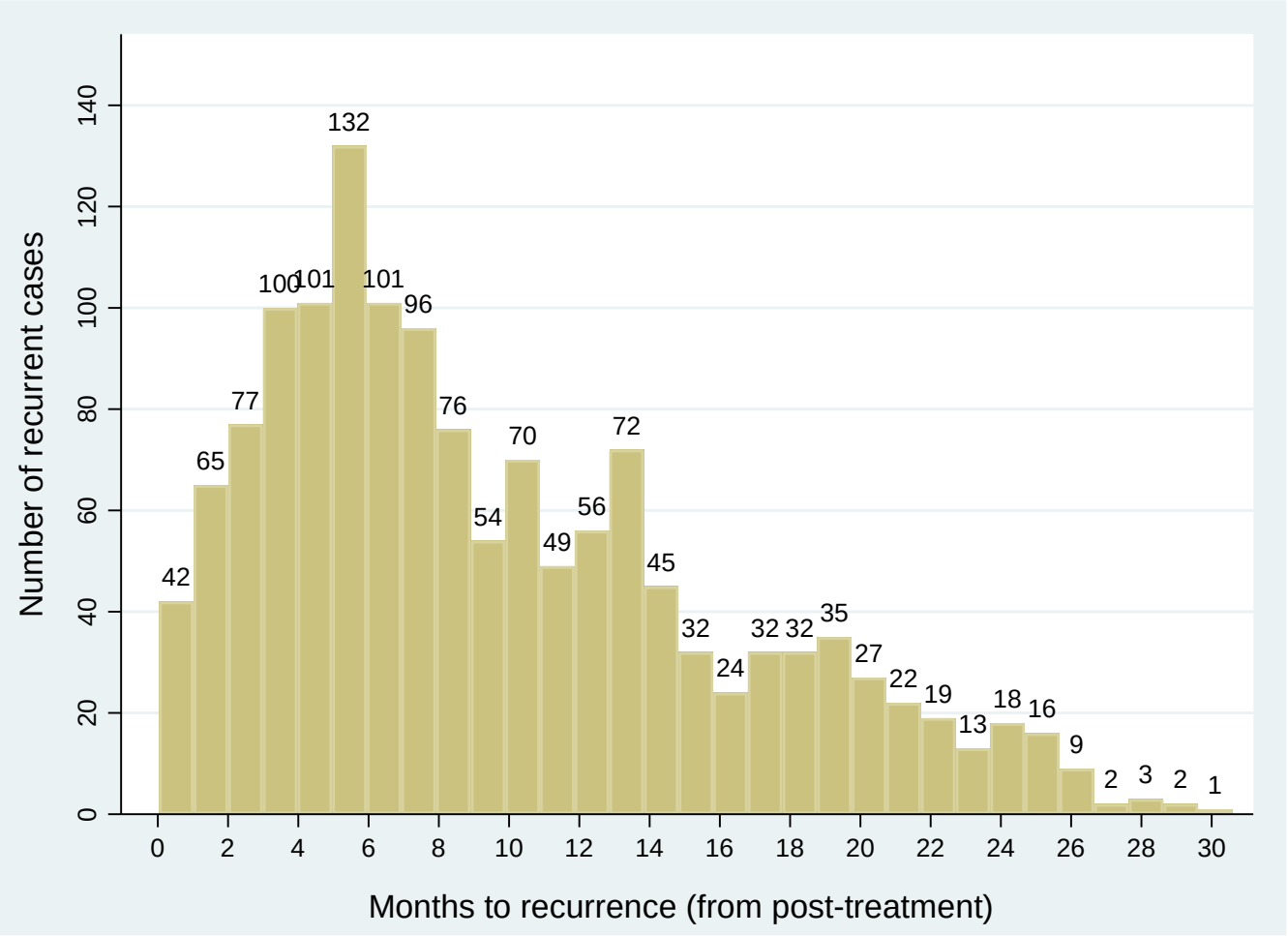
N=1,217
Median: 7.8 months
Mean: 9.6 months

Time to Post-treatment Case Fatality



N=1,328
Median: 7.5 months
Mean: 8.8 months

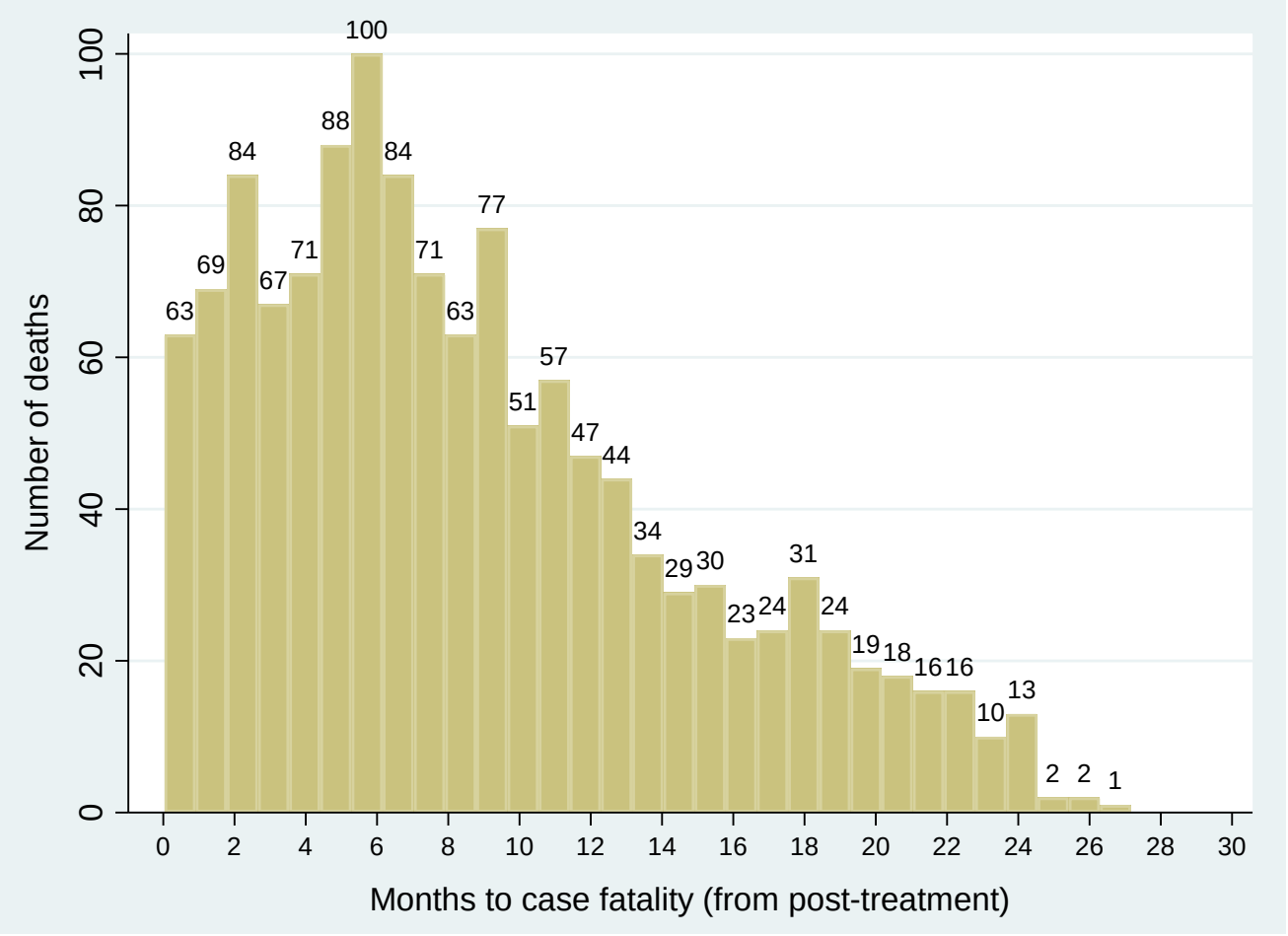
Time to Recurrence



Post-treatment follow-up (months)	% of Total Recurrence identified	% of Total Recurrence (Cumulative)
1-3	13%	13%
3-6	24%	36%
6-9	19%	56%
9-12	12%	68%
12-15	12%	80%
15-18	6%	87%
18-21	7%	93%
21-24	3%	97%
>24	3%	100%

68% of total recurrence identified within 12 months

Time to Post-treatment Case Fatality



Post-treatment follow-up (months)	% of Total post-treatment death identified	% of Total post-treatment death (cumulative)
1-3	19%	19%
3-6	21%	40%
6-9	19%	59%
9-12	15%	74%
12-15	9%	83%
15-18	7%	90%
18-21	6%	95%
21-24	4%	99%
>24	1%	100%

74% of total post-treatment case fatality occurred within 12 months

TB Recurrence and Post-treatment Case Fatality

Age	Sample	Recurrence % (N)	Case Fatality% (N)
<=15	3104	3% (79)	2% (47)
16-30	17287	4% (664)	2% 390)
31-45	11759	5% (544)	5% (546)
46-60	7536	4% (317)	7% (500)
>60	3265	3% (85)	12% (387)
Gender			
Female	16821	3% (553)	3% (491)
Male	27469	4% (1191)	5% (1428)
Transgender	39	-- (0)	-- (2)
Sector			
Public	31,002	5% (1507)	5% (1534)
Private	12,568	1% (185)	3% (396)

Site	Sample	Recurrence % (N)	Case Fatality% (N)
Pulmonary	32370	4% (1452)	5% (1617)
Extrapulmonary	11938	2% (292)	3% (303)
Basis			
Clinical	22,421	2% (435)	3% (764)
Microbiol. Confirmed	21,789	6% (1296)	5% (1157)
Type of regimen			
New	37646	3% (1036)	4% (1438)
Retreatment	5720	10% (596)	8% (445)
PMDT	844	12% (99)	5% (38)
Treatment Outcome			
Cured	14,018	7% (993)	837 (6%)
Treatment Completed	30,345	2% (750)	1126 (4%)

TB Recurrence and Post-treatment Case Fatality

% Recurrence	6 month	12 month	18 month	24 month
New	2.8% (N=11,345)	2.8% (N=11,192)	2.9% (N=8168)	2.5% (N=6976)
Retreatment	15.2% (N=1,667)	10.0% (N=1,692)	7.7% (N=1,397)	6.8% (N=971)
DR-TB	14.1% (N=369)	9.9% (N=323)	11.5% (N=113)	4.9% (N=41)

% Post-treatment case fatality	6 month	12 month	18 month	24 month
New	2.7%	3.4%	4.6%	5.4%
Retreatment	6.7%	8.3%	8.3%	7.9%
DR-TB	5.4%	5.3%	--	2.4%

Learnings

- Response rate via telephonic screening was >70%, among patients with available contact information
- Higher risk of recurrence and mortality was observed among males above 30 yrs, microbiologically confirmed, and pulmonary cases.
- Maximum of recurrence (68%) and post-treatment case fatality (74%) occurred within 12 months.
- Post-treatment follow- up intervention resulted in 17% increment in notification of previously treated TB patients in the intervention geography during the corresponding period.
- Engagement of Nikshay Sampark in post-treatment follow-up and scale-up across states