



Results of Nationwide TB Prevalence Survey Myanmar October 2017 – September 2018

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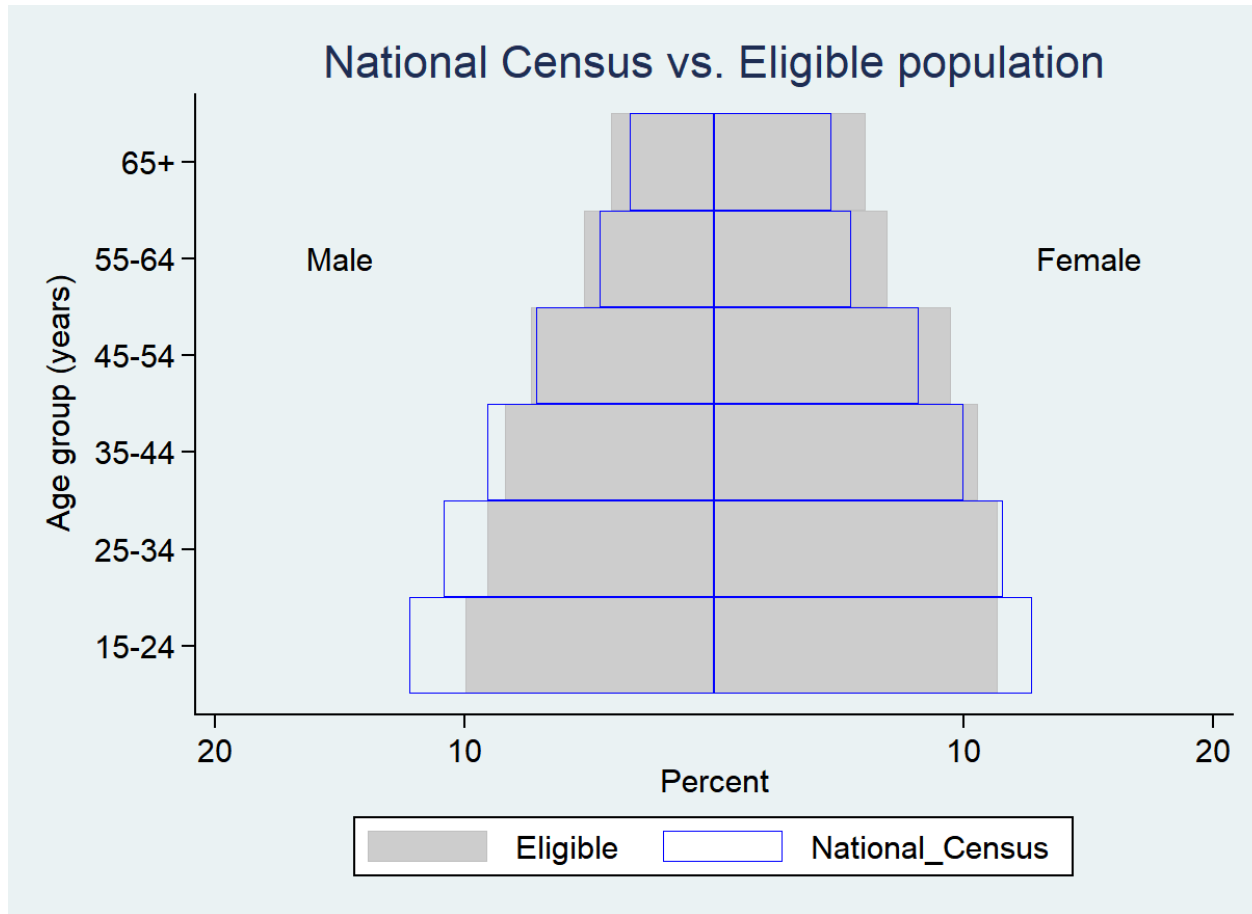


Outline of presentation

1. Participation rate of survey
2. Screening results
3. Care seeking behaviours and place of diagnosis
4. Definition and characteristics of study cases
5. TB Prevalence and estimated case load
6. Findings of cluster assessment
7. Key messages
8. Next steps



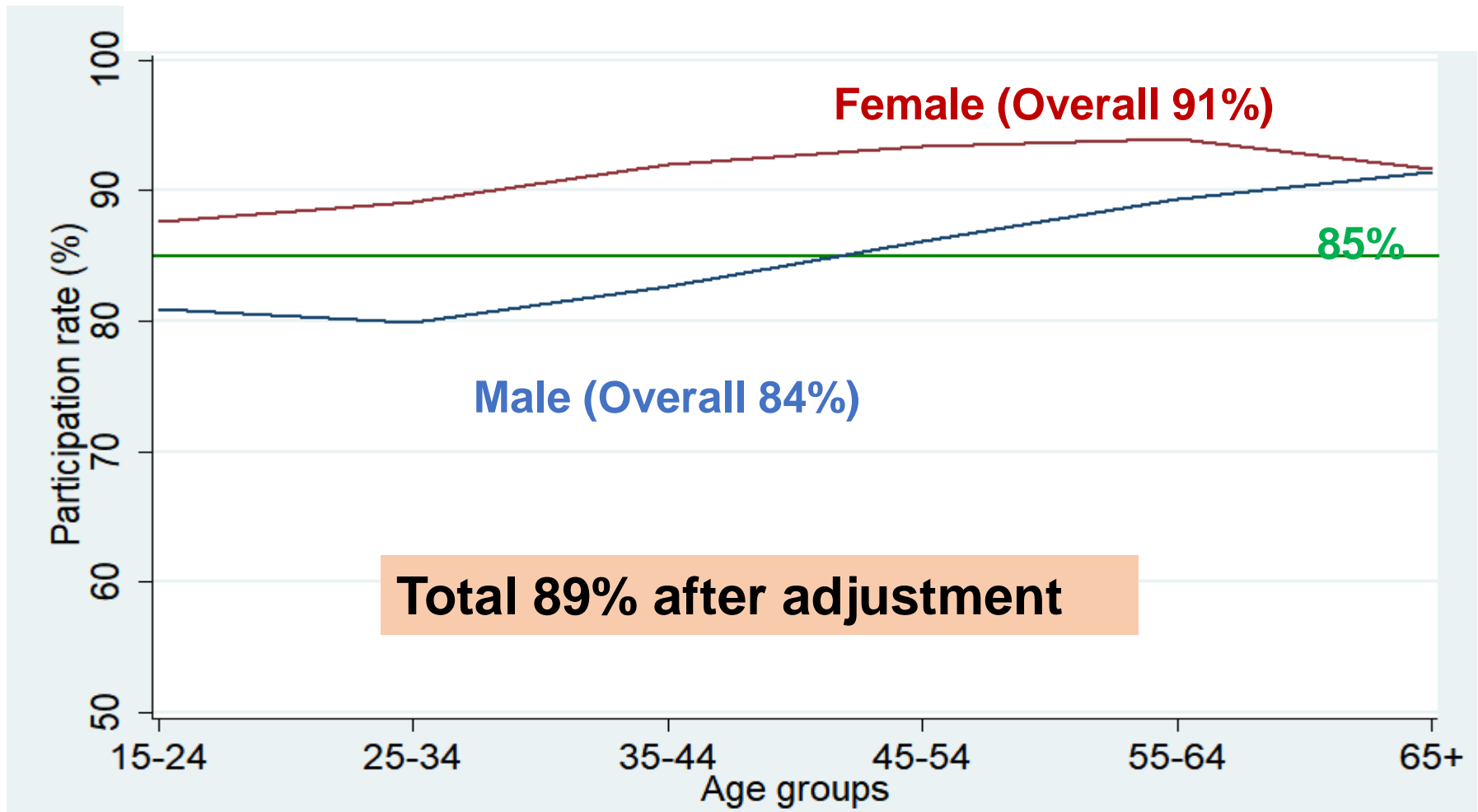
National population vs Eligible population



Young male population was under representative among eligible population in the survey. Adjustment was made for estimation.



Participation by age and sex

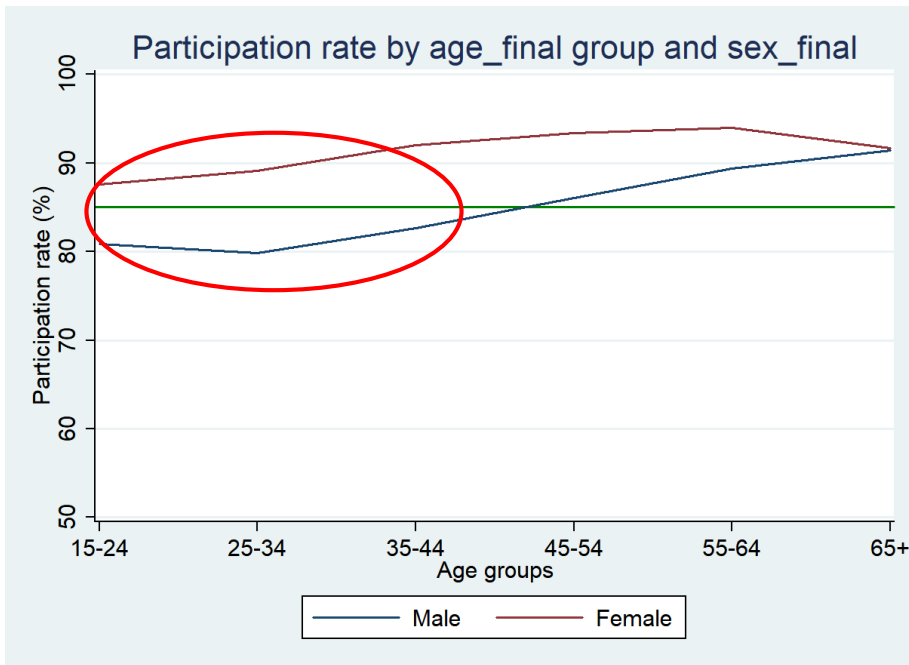


- **Less participation rate among young male**

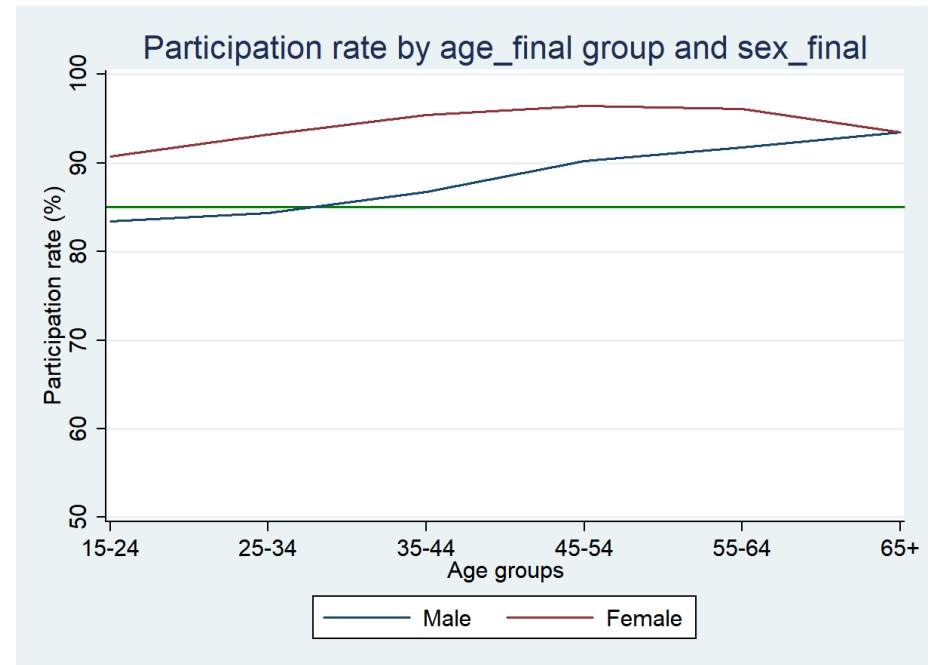


Participation by age and sex (cont;)

Urban

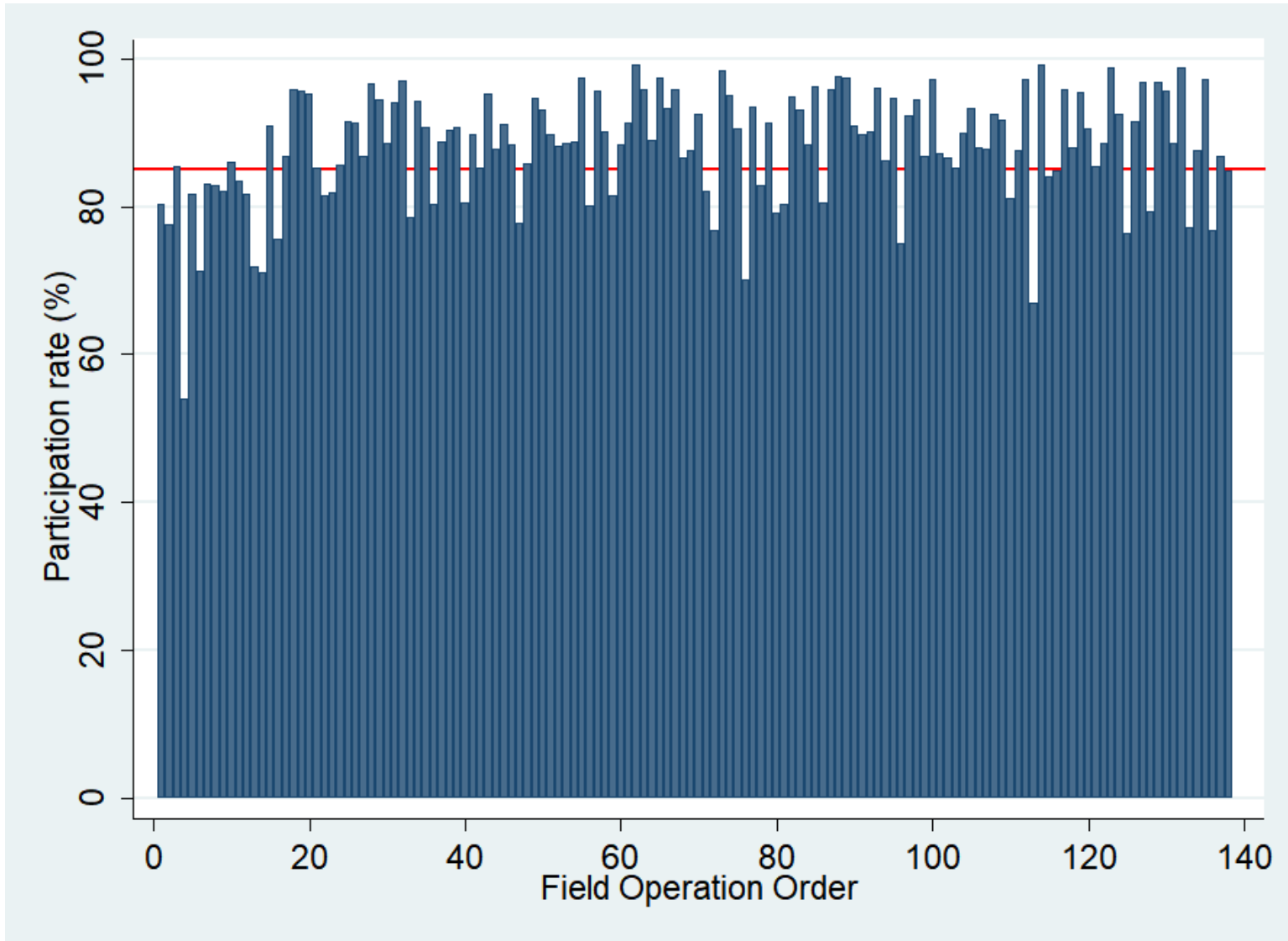


Rural





Participation rate over time



**Target
85%**



Summary data from flow chart

Total enumerated

- 114,235

Eligible to participate

- 75,676 (66% of enumerated)

Participants

- 66,480 (88% of eligible)

Participants screened positive

- 10,082 (15% of participants)

At least one Xpert result available

- 9,748 (97% of screened positive)

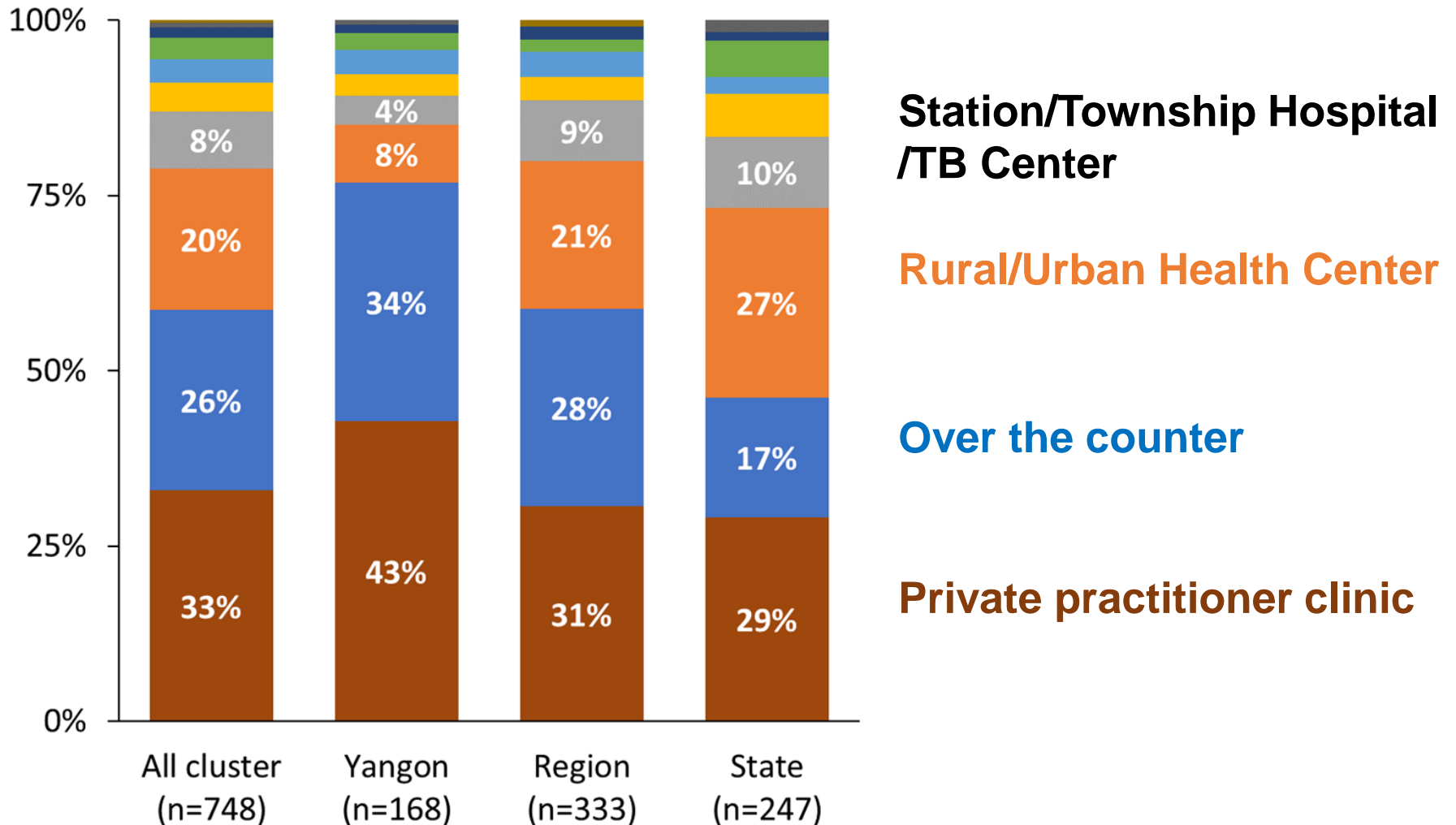
At least one culture result available

- 4,949 (97% of 5088 screened positive in 70 culture clusters)



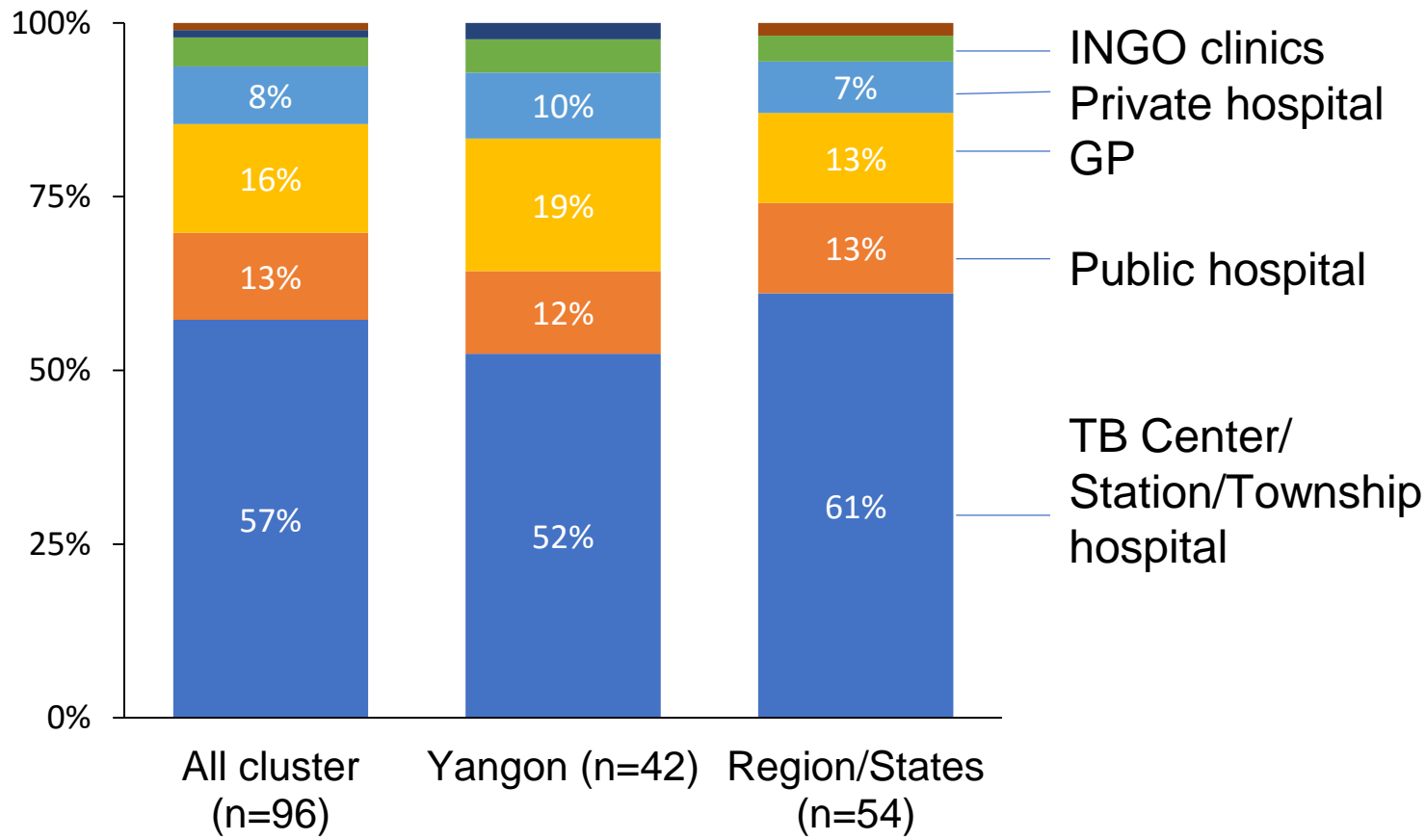
Behaviour regarding current episode of cough ≥ 2 weeks (n=1387, 2.1% of participants)

(1) Where did you first seek care? – **Yes 748 (54%) / No 639**





TB patients on treatment (n=96): Place of TB Diagnosis



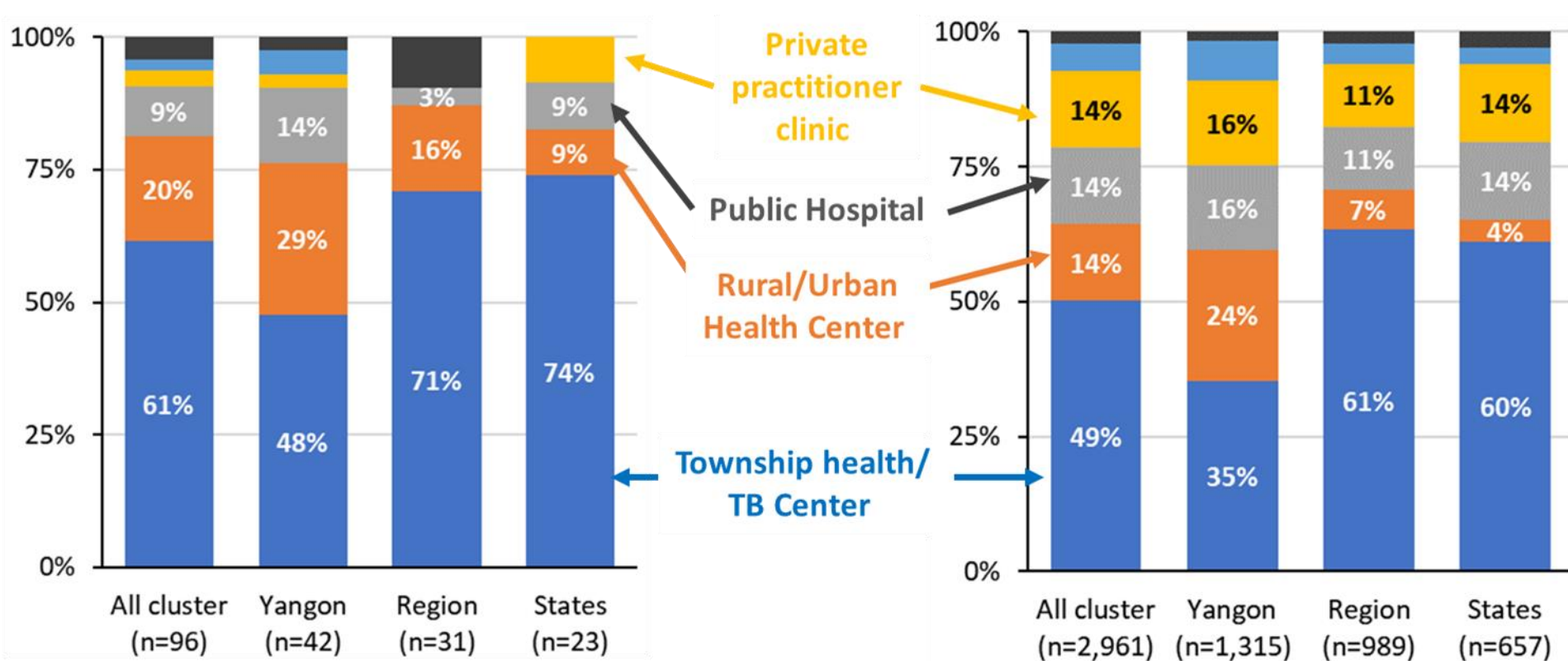


Place of Treatment

Where are (were) you taking the treatment?

Those with **current** TB Treatment

Those with **past** TB Treatment





Laboratory results and Survey Cases

	States	Regions	Yangon	Total
Eligible for Bacteriological Exams	2313	4430	3338	10081
At least one Xpert test submitted	2310	4422	3325	10057
At least one Xpert MTB+ (excluding Trace)	95	190	142	427
Culture confirmed MTB among Xpert MTB detected	34	42	41	117
Active TB by clinical panel decision without culture confirmation	31	107	67	205
Bacteriological confirmed Active Pulmonary TB (Not on Treatment)	65	149	108	322
Patients on Treatment	23	31	42	96
Patients on Treatment with confirmed B+ TB at initial diagnosis	6	14	20	40



Case definition used for bacteriologically-confirmed pulmonary TB and number of cases, for PRIMARY analysis

Case definition:

Any Xpert MTB detected excluding trace with at least one of the following conditions:

- culture MTB+ ;
- active TB by clinical panel assessment

Number of cases that met the definition:

322



Characteristics of study cases

	Total		State		Region		Yangon	
Study Cases	322		65		149		108	
Cough for 2 weeks or longer	45	14%	13	20%	20	13%	12	11%
With any TB related symptom (s)	153	48%	34	52%	69	46%	50	46%
CXR field screening +	321	100%	64	98%	149	100%	108	100%
CXR central screening +	313	97%	63	97%	146	98%	104	96%
CXR central reading active TB	267	83%	57	88%	118	79%	92	85%
No TB treatment history	305	95%	62	95%	145	97%	98	91%
Previously treated	17	5%	3	5%	4	3%	10	9%
Smear positive	42	13%	14	22%	14	9%	14	13%
Culture MTB+	117	36%	34	52%	42	28%	41	38%
Male	236	73%	46	71%	112	75%	78	72%
Female	86	27%	19	29%	37	25%	30	28%



Age distribution of survey cases

	Total		State		Region		Yangon	
Study Cases	322		65		149		108	
15-24	24	7%	5	8%	6	4%	13	12%
25-34	37	11%	5	8%	17	11%	15	14%
35-44	59	18%	11	17%	26	17%	22	20%
45-54	58	18%	12	18%	26	17%	20	19%
55-64	69	21%	14	22%	38	26%	17	16%
65+	75	23%	18	27%	36	24%	21	19%



MDR (RR) TB Study Cases

	Total	State	Region	Yangon
Xpert Positive	322	65	149	108
RR (%)	10 (3.1%)	3 (4.6%)	3 (2.0%)	4 (3.7%)
RR New	7/305 (2.3%)	2	2	3
RR with Previously Treatment	3/17 (17.6%)	1	1	1
RR on treatment	10	1	1	8
Total RR TB	20	4	4	12



Prevalence estimation method (Based on consensus in workshop in Geneva 19-22 Feb 2019)

Model 1: complete case analysis with IPW

Model 3: MI + IPW

- **Complete case analysis:** Excluding participants with missing outcomes from both numerator and denominator
- **IPW** (inverse probability weighting): Weight adjustment based on cluster allocation, cluster size, participation rate, etc
- **MI** (multiple imputation): Imputing missing values by considering outcome and key variables

Software: Stata Version 14

[Ref: Tuberculosis Prevalence Survey: a Handbook \(WHO; 2011\)](#)



Prevalence of Xpert+ Active Pulmonary TB (per 100,000 population) in study populations, Myanmar, 2018

(Three sub-national surveys) - Method 1

	States	Regions	Yangon
All (15yr-)	363.2 (261.3-465.0)	497.5 (370.8 – 624.2)	608.3 (472.0 – 744.5)
Urban	337.4 (148.4-526.4)	609.1 (233.4- 984.7)	644.6 (476.4 – 812.8)
Rural	372.3 (251.7 – 493.0)	464.4 (343.7 – 585.1)	515.0 (291.8 – 738.3)
Male	586.9 (381.7- 792.0)	855.1 (615.7 – 1094.4)	1026.2 (751.0 – 1301.5)
Female	184.6 (98.8 – 270.5)	212.4 (123.5 – 301.3)	286.7 (179.3 – 394.0)



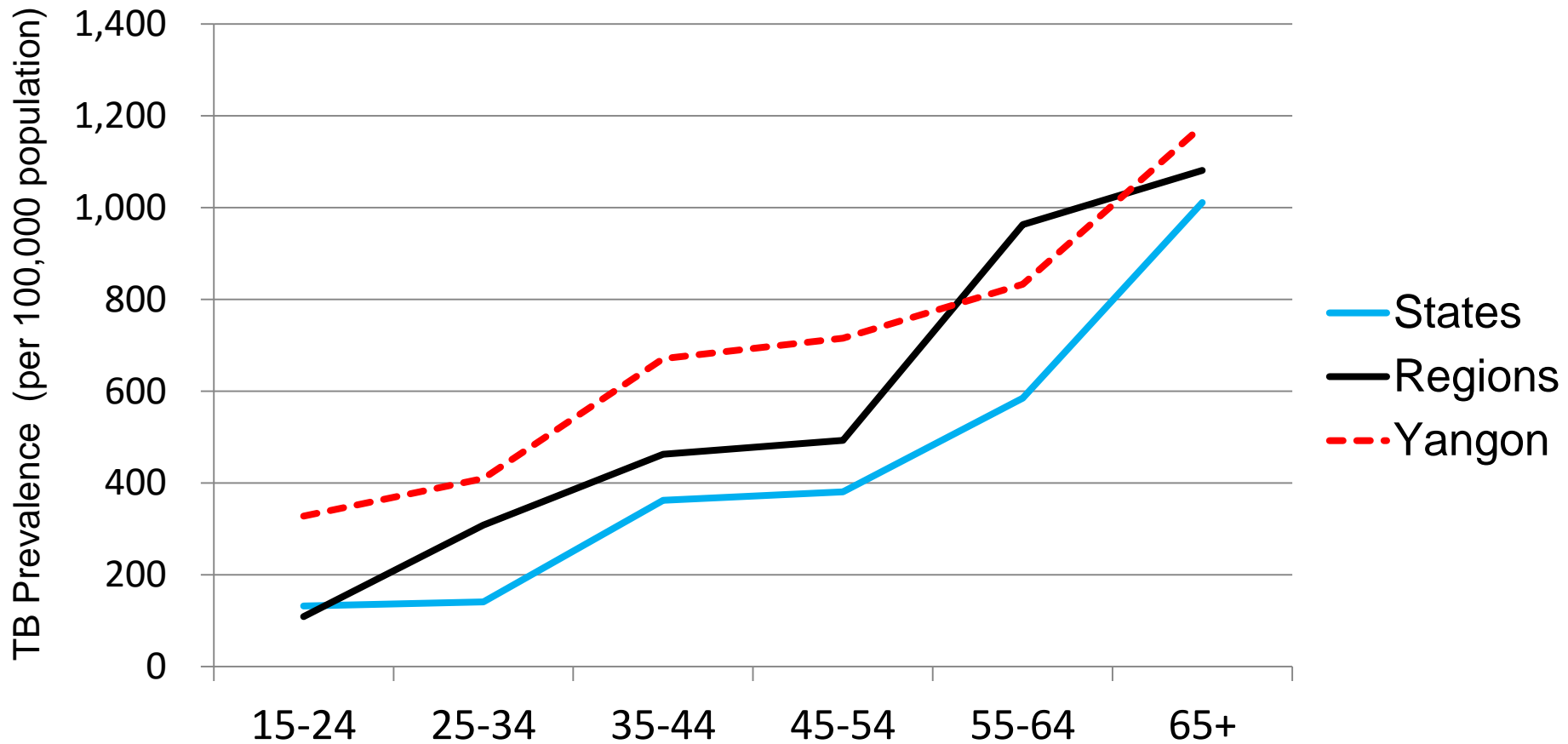
National Prevalence of Xpert positive active pulmonary TB (per 100,000 pop.) in survey population (≥ 15 year or older, 2018)

Type of analysis	Provisional estimate
Model 1 (complete case) with IPW	479.7 (398.5-560.8)
Model 3 (MI + IPW)	486.6 (405.2-568.1)
Model 3 (MI + IPW) with adjustment of National Census pop aged 15 yrs or over (projection for 2018)	467.5 (389.8-545.1)

B+ (culture) prevalence 2009-2010: 613 per 100,000 pop.

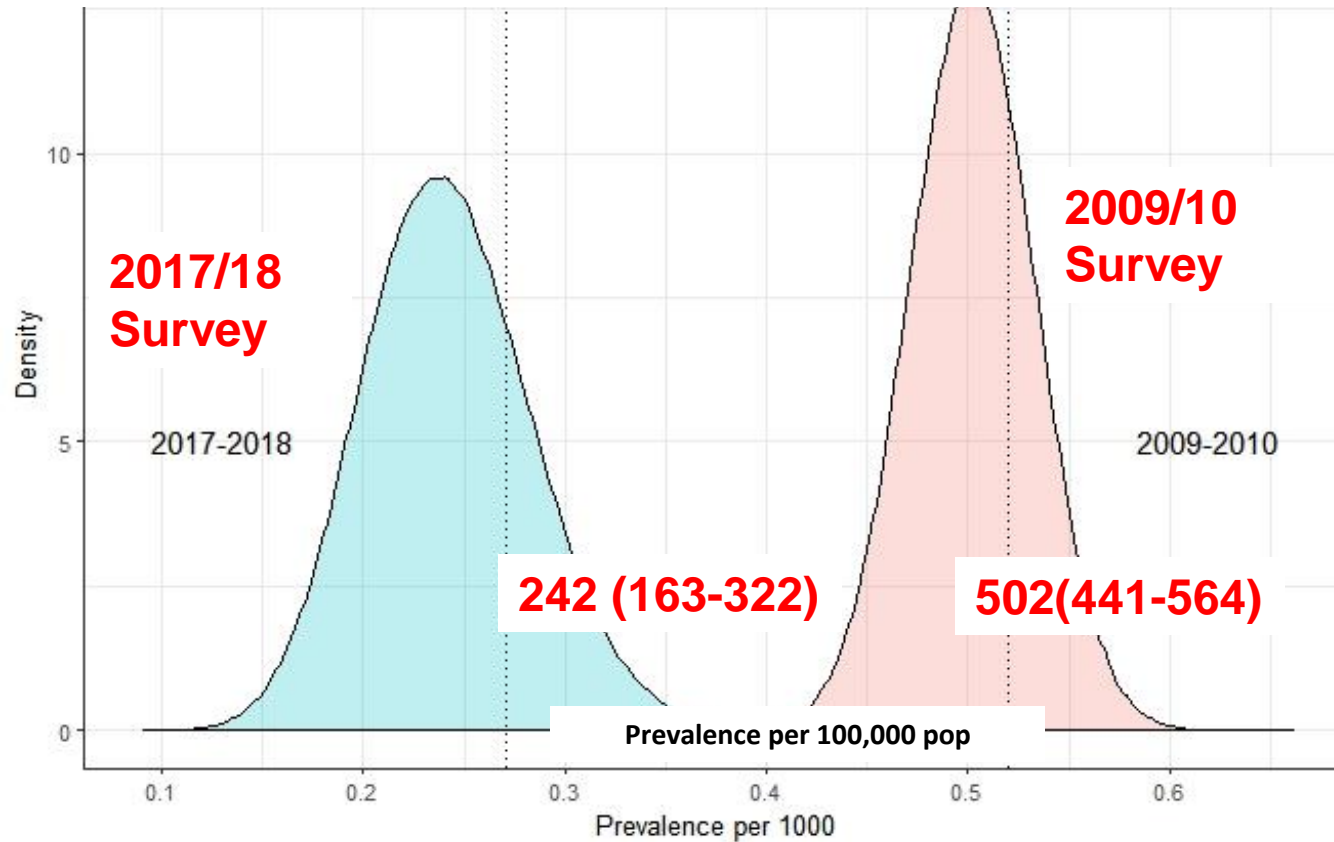


Prevalence of Xpert MTB+ active pulmonary TB



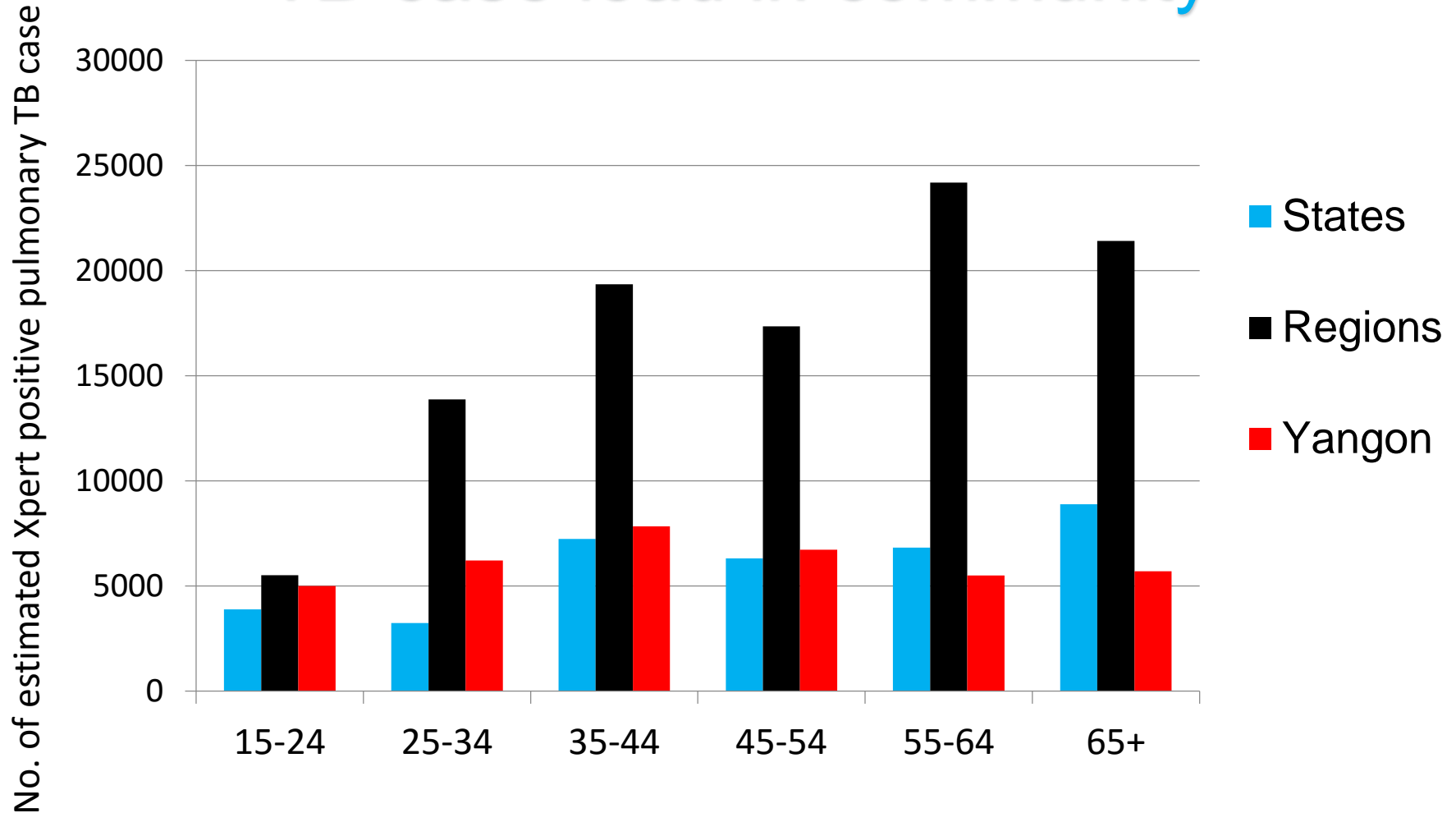


Culture positive TB prevalence by one morning sample in 2009/10 and 2017/18





Estimated Xpert positive pulmonary TB case load in community

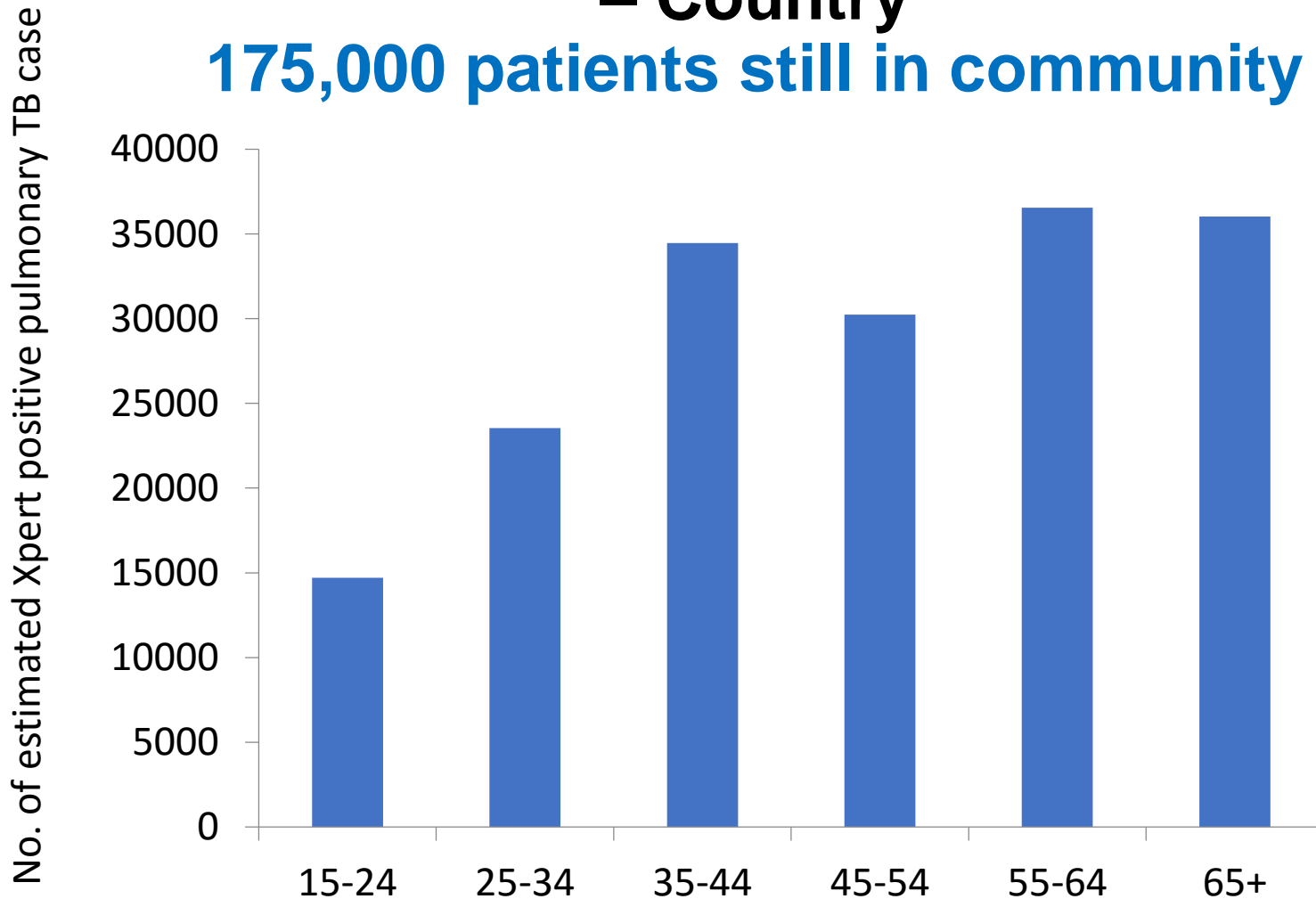


Ref: Population data from UNFPA Myanmar projection for 2018



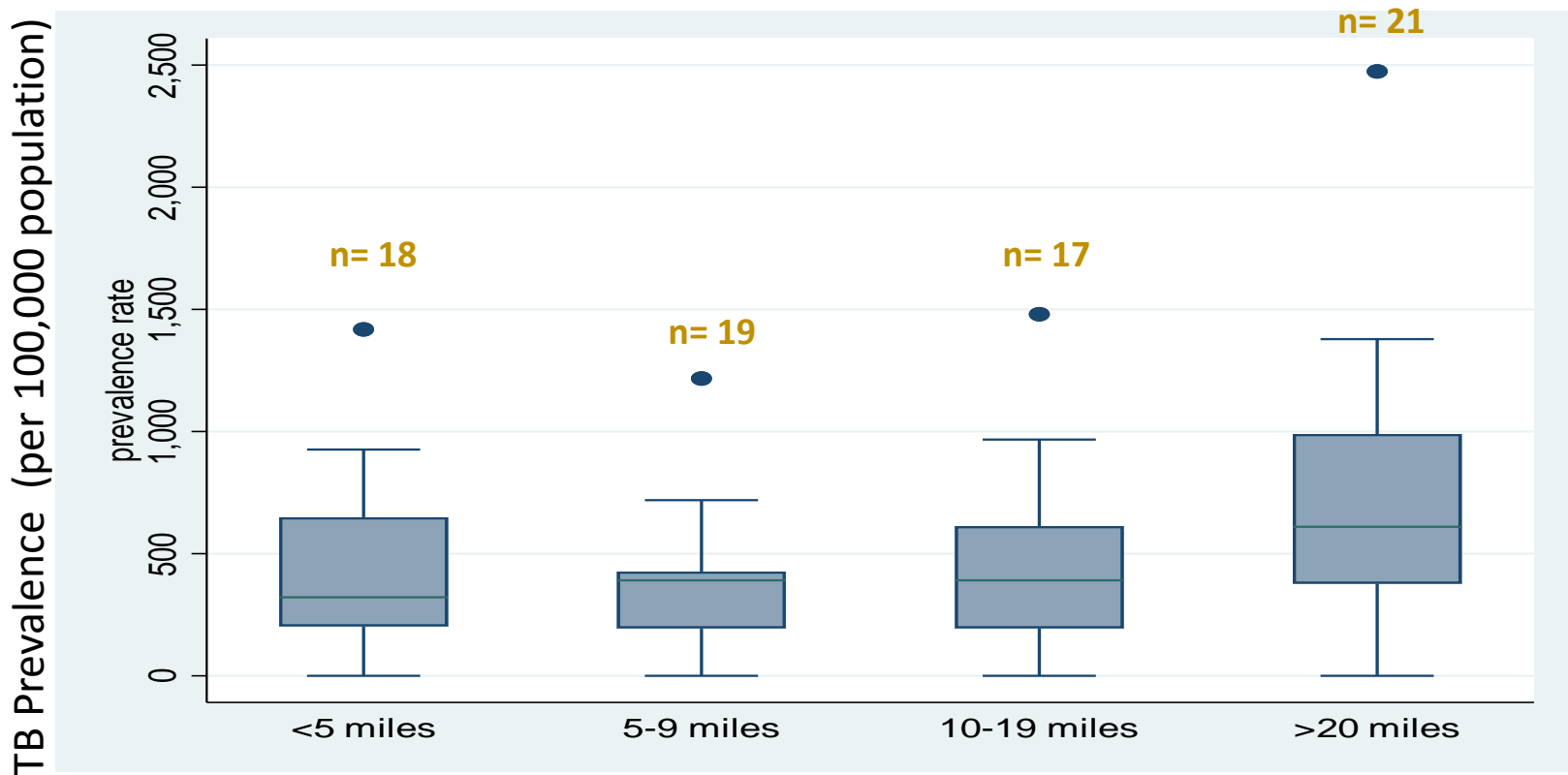
Estimated Xpert positive pulmonary TB Case Load – Country

175,000 patients still in community





Cluster Prevalence Vs Cluster distance to TB Center in rural clusters of States and Regions (Excluding Yangon)





Key messages

- National and sub-national Surveys with high quality completed
- Significant reduction of country TB prevalence particularly in States (→ Next Presentation)
- Still high TB burden in Myanmar
- Limitation of symptom screening and smear; advantages of CXR and GeneXpert
- Higher prevalence in Yangon despite of good access to health service
- Half of community TB burden in old and oldest population (50% of TB in aged ≥ 50 y)
- High TB prevalence in remote villages with poor access to TB service



Key messages (Continued)

- More confirmed TB by new technology
- Limitations: Sub-clinical cases in community most probably due to poor access to TB diagnosis and treatment in past decades such as Xpert Ultra Trace only, “culture negative and CXR not active”; Childhood TB; Extrapulmonary TB; Follow up data collection including treatment results to be completed in June 2019.



Next Steps

- Re-estimation of TB burden including incidence by WHO Global Task Force based on prevalence survey on *28-30 May 2019*
- Draft prevalence survey report in *June 2019* (Final Report before JMM)
- WHO workshop (Global) on NSP in *June 2019* (TBA)
- Joint Monitoring Mission (JMM) in *11-21 August 2019*
- Draft report of JMM in *September 2019*



Next Steps

- Global fund concept note consultation meeting in *September 2019 onwards*
- NSP draft with costing and narrative writing in *December 2019*
- Draft Concept Note for Global Fund in *February 2020*
- Draft Concept Note and share with TB TSG in *February 2020*
- Final submission of Global Fund concept note with MHSCC endorsement in *March 2020*

Thank you

