

Improvement of smear preparation by non laboratory technician in Kandal province, CAMBODIA

By Mr. Phann Vuth

Provincial TB laboratory supervisor
Provincial Health Department of Kandal
Mobile phone: (855) 11 978 274
E-mail: phannvuth@yahoo.com

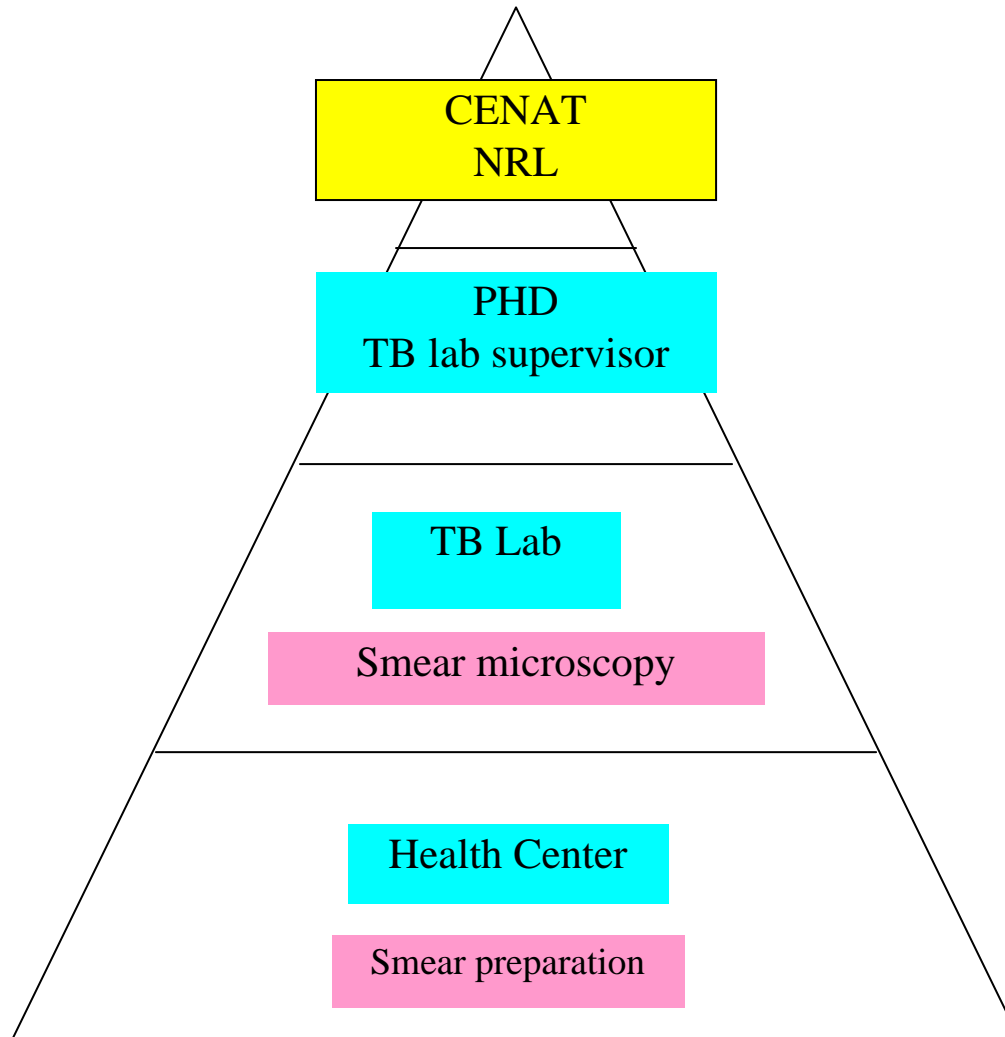
General situation -Kandal Province-

- Area: 3,555 Km²
- Population: 1,261,297 (06)
- Operational district (OD): 08
- Referral hospital: 05
- TB laboratory: 11
- Health Center (HC): 89

General situation

	Saang OD (Study area)	Koh Thom OD (Control area)
Population	162,434 (2006)	157,069 (2006)
Referral hospital	01	01
TB laboratory	01	01
Health center	12	12
No of smear exa.	5231 (2006)	4884 (2006)

Laboratory network



Background

- Before 2003 all smear slides were prepared by laboratory staff.
- 2003 DOTS was expanded to HC in this OD.
- Since smear preparation is dependent on HC smear quality is not good.
- Problem analysis show some issue such as (lack of motivation, lack of supervision, no feedback)
- Major errors were found frequently.
- To solve these problems the study was done

Method

- Refresher training for smear preparation was conducted to 8 HCs.
- Laboratory staffs were trained to assess smear.
- Monthly assessment of smear preparation was expanded from 5 to 8 HCs
- All smear slides from selected HCs were assessed for performance

Method (continue)

- Feedback was given back promptly to HCs.
- Monthly supervision was performed in selected HC with poor performance.
- Quarterly meeting were done.
- One area was selected as control.
- 20 slides were selected from lab for EQA every quarter.

Smear assessment point

- Sputum quality
- Size
- Thickness
- Evenness

All check point should be \geq **80%**

Major error classification

- HFP (High False Positive):
If laboratory result is positive from 1+ to 3+ but EQA result is negative.
- HFN (High False Negative):
If laboratory result is negative but EQA result is positive from 1+ to 3+.

Evaluation form

Feedback sheet

Health center:.....Operational district:..... Province.....

Month:..... Year:.....

1- Smear assessment:

Number of smear assessed:.....

Size	good:	big:	small:
thickness	good:	thick:	thin:
evenness	even:	uneven:	
sputum quality	good:	saliva:	

2- Comment:

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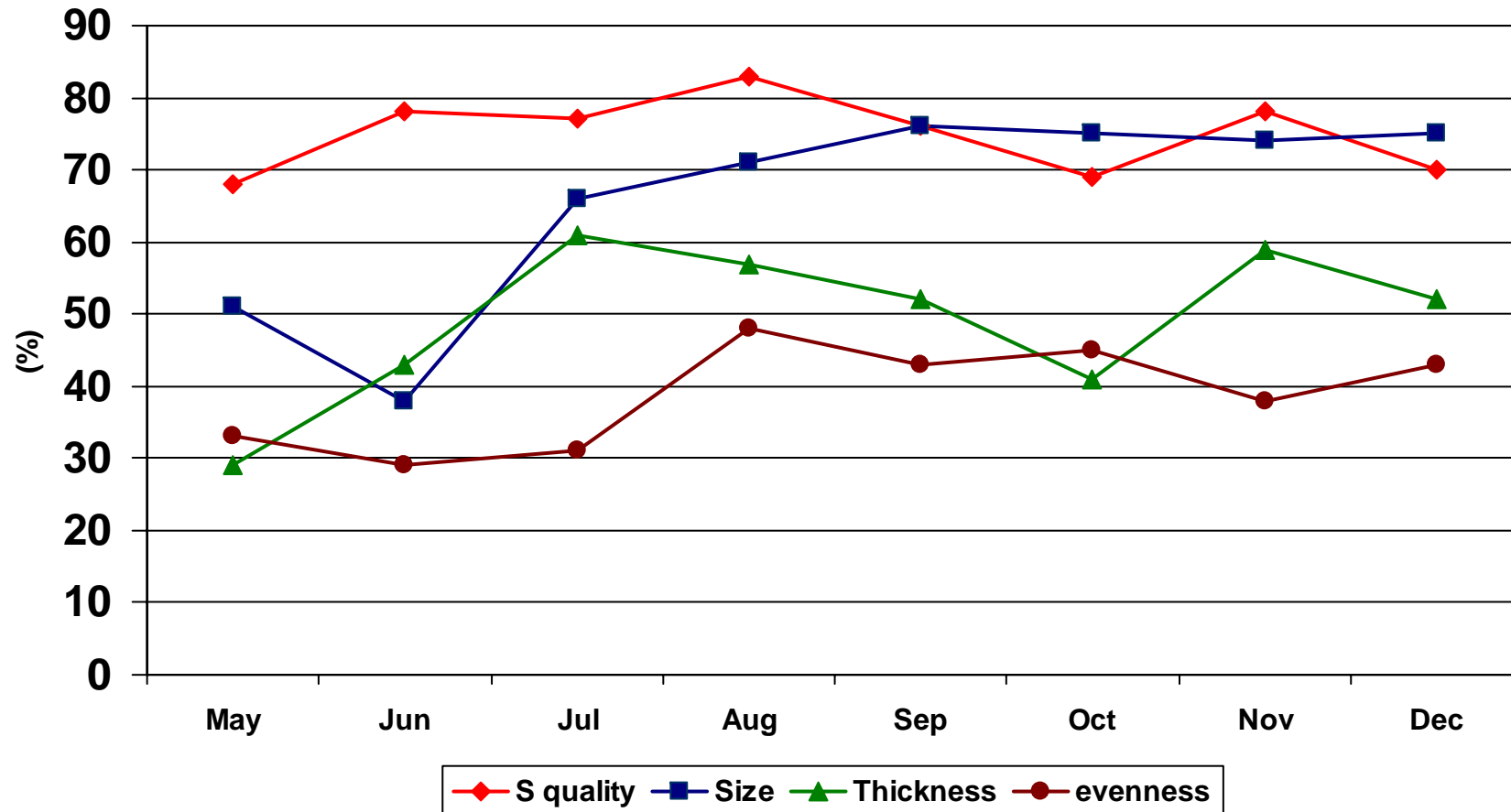
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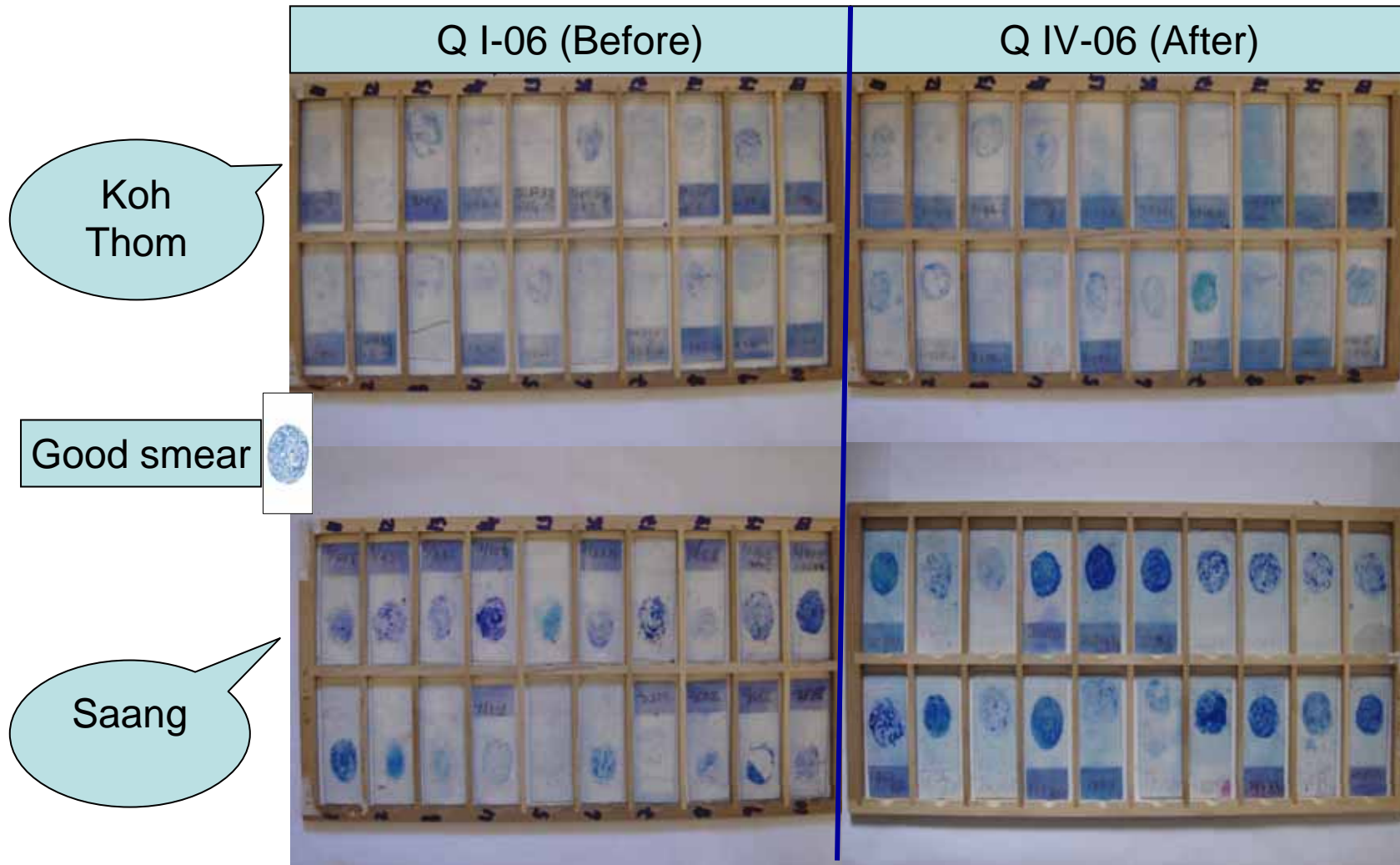
Trend of smear preparation in SAANG



EQA result 2006

	TB lab			
	Saang (study area)		Koh Thom (control area)	
	Q1(before)	Q4(after)	Q1(before)	Q4(after)
Sputum quality	90 %	90 %	60 %	55 %
Thickness	75 %	80 %	65 %	50 %
Size	20 %	85 %	35 %	45 %
Evenness	25 %	60 %	15 %	20 %
Major error	0	0	0	0
Minor error	0	0	0	0

Comparison of smear preparation between study area and control area -EQA slides-



EQA result

Year	Major error (slide)	
	Saang	Koh Thom
2003	5	0
2004	4	0
2005	4	0
2006	0	1

Constrain

- Workload of HC staff.
- Keep specimen more than 1 day.
- Chang staff.
- Some trained staffs do not prepared smear, but untrained staffs do.
- Delay of feedback.

Conclusion

- Laboratory staff is essential to monitoring smear preparation at HCs.
- Smear assessment, feedback and supervision is needed.
- Improvement of smear preparation may also contribute to reducing major error.

A woman in traditional Cambodian attire, including a white and gold sari and a tall, ornate golden headdress, stands in a prayerful pose with her hands clasped. She is positioned in the foreground, with a large, ancient stone temple complex (Angkor Wat) visible in the background. The temple is reflected in a body of water in the foreground. The sky is clear and blue.

Thank you for your attention

Welcome to Cambodia