- Ethiopia, one of the few African nations never colonized, symbolized African resilience and pride.

- This inspired Nelson Mandela.

- In 1962, he traveled to Ethiopia, where he received military training and political support under Emperor Haile Selassie.

Dengue outbreak Investigation in Metahara Town, East Shewa, Oromia, Ethiopia,2023

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Cape Town, South Africa

Acknowledgment

Presentation outline

- **Introduction**

- **Methods**

- **Results**

- **Conclusion**

- **References**

Introduction

- On 25th July,2023, Metahara health center reported an increased cases with fever, headache, joint pain, nausea, and vomiting, with negative result for malaria tests.

- The objectives of this study were:
  - To verify existence of Dengue outbreak
  - To describe the outbreak in terms of person, place & time
  - To identify risk factors
  - To undertake prevention and control measures

Methods and materials

- **Study setting and period:** Metahara town from 25th July/2023 to September 5/2023

- **Study design:** unmatched case-control

- **Source population:** All residents of Metahara town

- **Study population:**

- All randomly selected patients having a positive laboratory test result for DENV using RT-PCR or RDT or epidemiologically linked cases during the study period.

- Control was any person who lives in the same block with the case, but no signs or symptoms of the disease during the study period.

Methods and materials…

Sample size

➢ Calculated using Epi-Info Version 7, Power = 80%, CI = 95%, exposure among controls=80.7%, and AOR=0.32

➢ Case – to- control ratio = 1 to 2 and a total of 150 study participants

Sampling technique

➢ Sampling frame was prepared using line list of Dengue patients

➢ One case of Dengue and two subsequent Dengue free individuals as control

Methods and materials...

Data collection

- Face to face interview, document review, Line list of patients, Environmental investigation, by 4 Diploma Nurse

- Training on data collection tool and kobo collect mobile application

Dependent Variable: Cases of dengue

Independent Variables: Demographic factors, Environmental factors, and Individual factors

Methods and materials

Data analysis

- Kobo toolbox for data collection and SPSS for analysis

- Characteristics of study participants was described

- Binary logistic regression and 95% CI and respective AOR .

- Significance of associations was declared at p-value < 0.05

Results

- Index case was found in July 25/2023 (12-year-old female)

- 11 samples were sent to the National laboratory

- On July 28/2023, four DENV confirmed by RT PCR with **DEV-3**

- A total of 342 Dengue cases and 3 deaths (CFR of 0.88~1%)

- The overall attack rate (AR) was 7.18 per 1000 population

Results ...

Age cat.	Population at risk			Sex category			Sex specific AR /1000		Overall AR/100
	M	F	Tot	M	F	Tot	M	F	0
0-14	9544	9430	18974	32	29	61	3.35	3.08	3.21
15-24	4631	4649	9280	36	40	76	7.77	8.60	8.19
25-54	7798	7892	15690	105	84	189	13.47	10.64	12.05
55-64	93	2014	2107	6	3	9	64.44	1.49	4.27
+65	54	1556	1611	3	4	7	55.10	2.57	4.35
Total	**22120**	**25541**	**47661**	**182**	**160**	**342**	**8.23**	**6.26**	**7.18**

Results ...
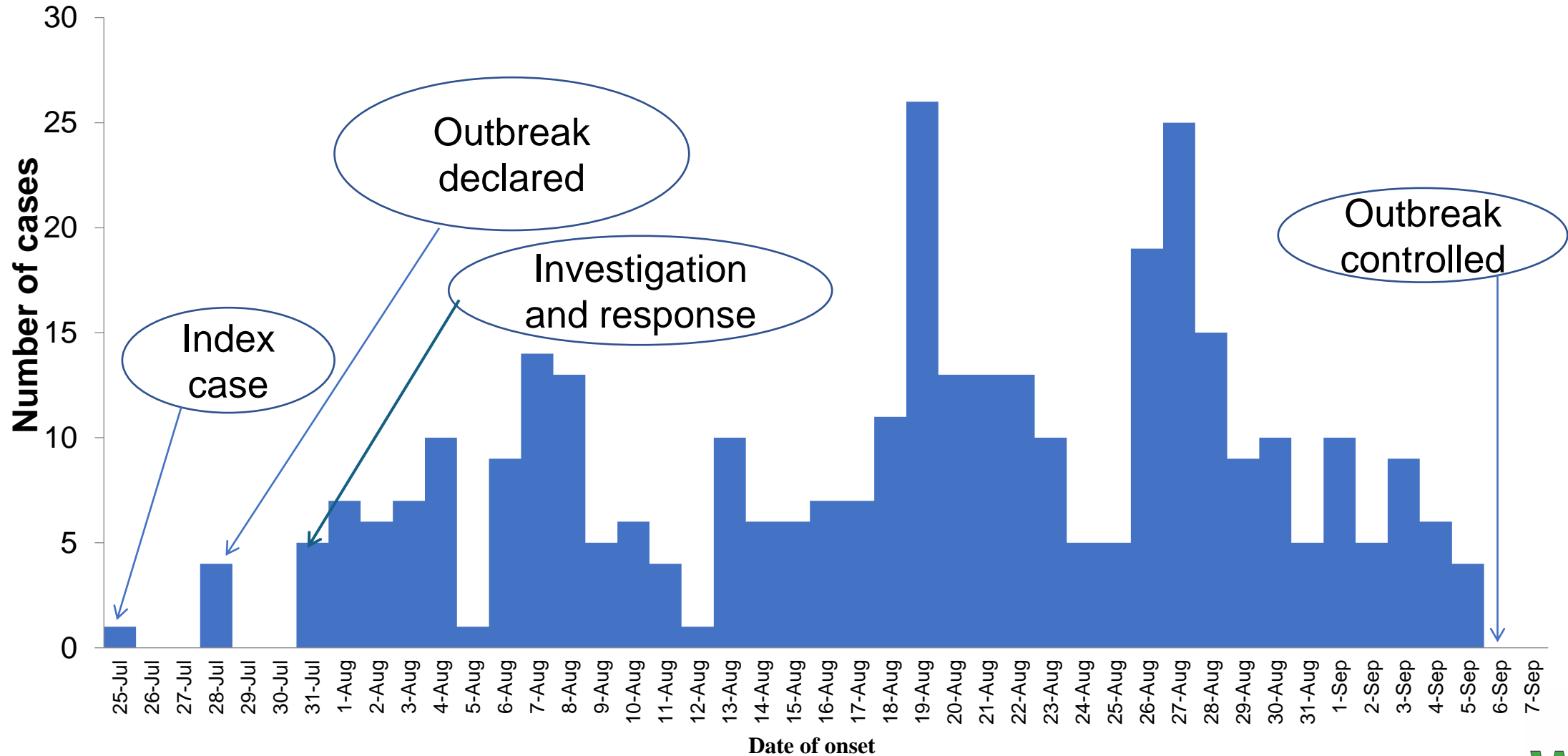
Results ....

Variables	Cat.	Status		COR(95% CI)	AOR(95% CI)
		Control	Case		
LLINs on daytime	No	70(70%)	47(94%)	6.71(1.94-23.27)	9.07(2.05-40.06) **
	Yes	30(30%)	3(6%)	1	1
Presence of water container	No	60(60%)	15(30%)	1	1
	Yes	40(40%)	35(70%)	3.5(1.7-7.23)	4.99(1.75-14.23)**
Wearing long Sleeve	No	40(40%)	32(64%)	1	1
	Yes	60(60%)	18(36%)	0.38(0.19-0.76)	0.25(0.08-0.76)*
Hear about dengue	No	88(88%)	16(32%)	15.58(6.68-36.34)	25.2(8.21-77.34)**
	Yes	12(12%)	34(68%)	1	1

Prevention and control measures

Diagnosis & case management

Antibiotics, antipyretics, fluid

Surveillance

Entomological investigation was conducted & identified *Aedes Egyptian* larvae

Vector control

2083 (94%) of breeding sites were managed

Responses

Coordination

RRT &
Task force closely follow

RCCE

Leaflets, social media, HE

WCE
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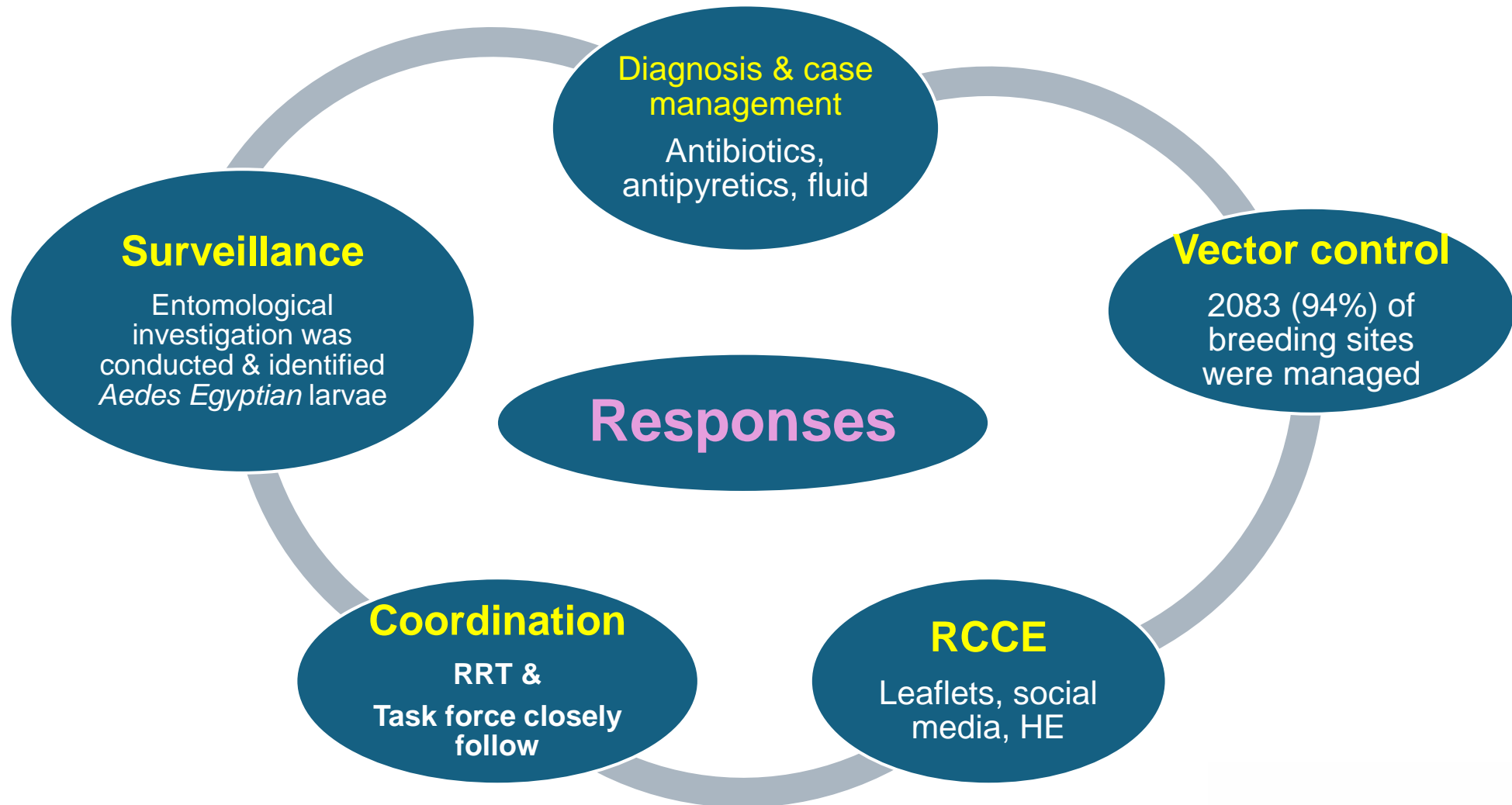
Conclusion

- This study confirmed Dengue outbreak in Metahara town, Ethiopia.

- Not using long-lasting bed nets, open water storage, and lack of information about dengue are risk factors,

- Long-sleeved clothing is protective.

- Promoting utilization of LLITN, managing breeding sites, and enhancing awareness through community engagement are needed.

Thank you!

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