

Animal bites and suspected rabies Outbreak Investigation

Lamu archipelago, 2013

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Introduction

- No global estimates for dog bite incidence
 - Country specific studies, PEP usage analysis, meta-analysis of literature point out low/middle income countries have highest burden
 - Dog bite consequences include injuries and infections
- i. Rabies is most important infection- Global annual mortality at 60,000 with 44% of the mortality in Africa
 - ii. *P. multocida* and *Capnocytophaga ochracea* – causes severe sepsis

Justification

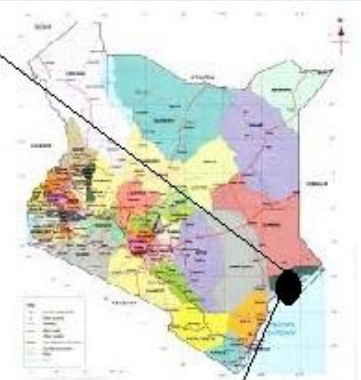
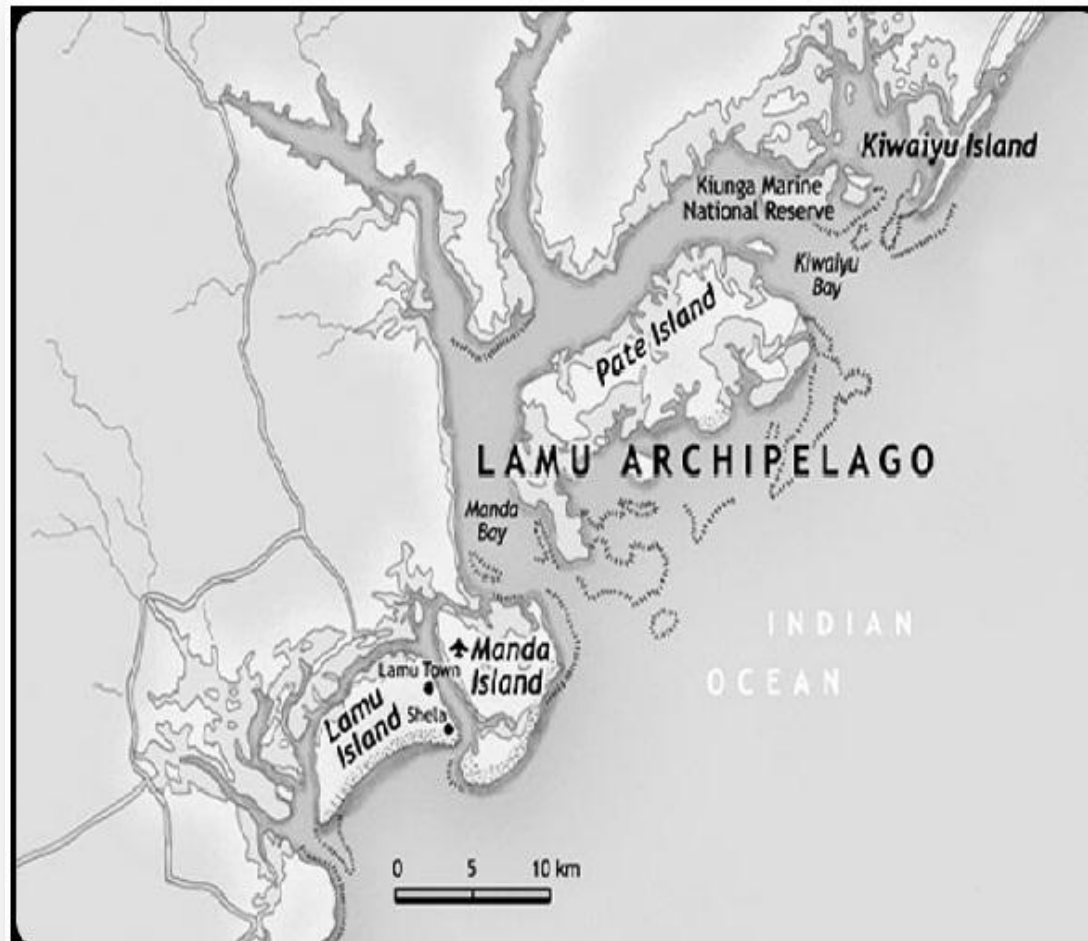
- 21st November 2013, request was made to the ZDU to initiate rabies outbreak investigation
- Confirmed rabies in 2 donkeys, Lamu and Pate Island
- Suspected human rabies death in Hindi, off the coast of Lamu

Objectives

- To confirm outbreak of dog bites in Lamu
- To describe human bites in terms of time, place and person
- To describe the characteristics, circumstances of the bites, post bite management and outcomes.

Methods

1. Study area



2. Study design

- Retrospective review of hospital records for patients presenting with animal bites injuries to health facilities October 2012- November 2013
- Active case search of dog bite victims in the community using key informant interviews and snow balling

3. Study period

25th November to 2nd December 2013

4. Case definition of human exposure to rabies- WHO

- **Suspected exposure :**

Close contact with a rabies susceptible animal in an endemic area

- **Probable exposure :**

Probable exposure with animal displaying signs consistent with rabies

- **Confirmed rabies exposure**

Probable case with contact with animal with laboratory confirmed rabies

RESULTS

1. Retrospective record review

- 42 dog bite cases – Incidence 41 per 100,000
- Descriptive epidemiology- TPP

Age- Mean age 20 years

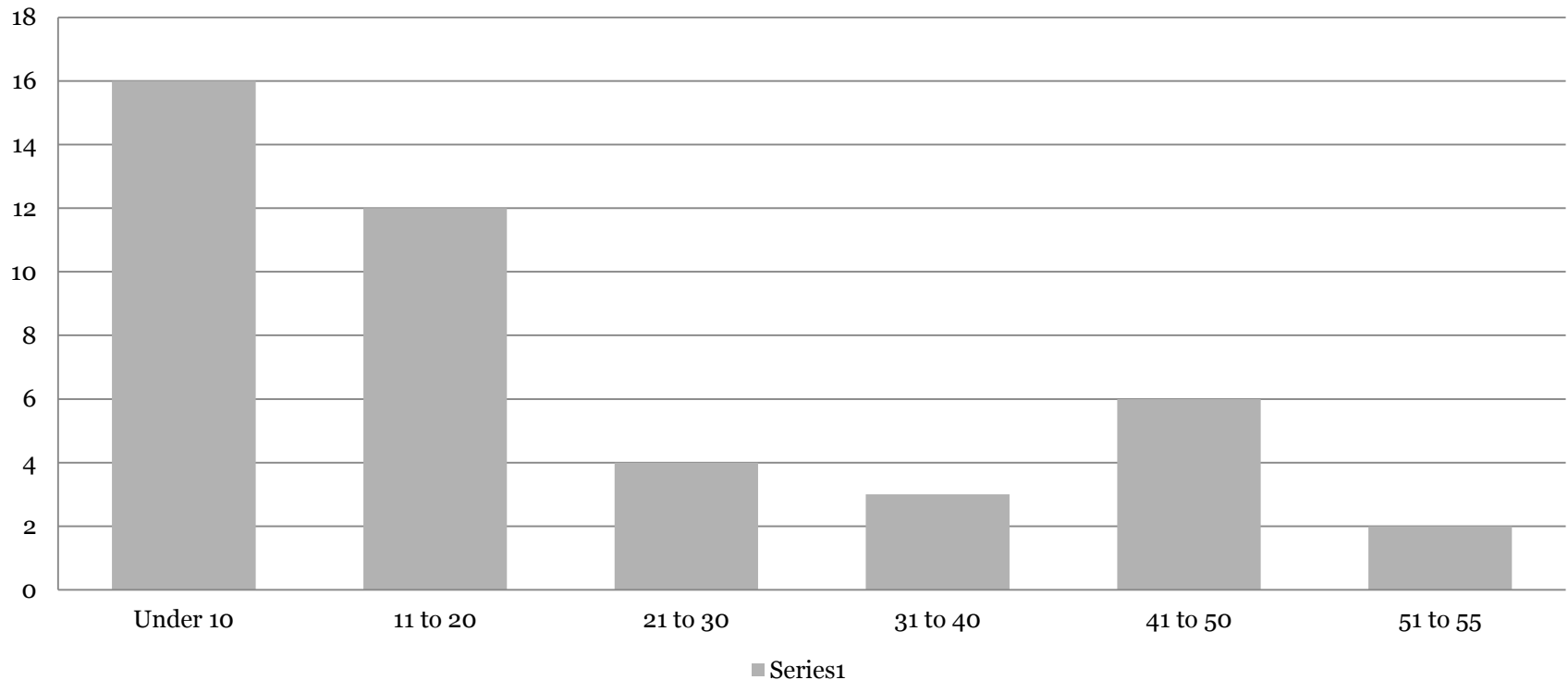
- Range 3-55 years

- SD 15 (68% of victims are 5-35 years)

Sex- 81% (n=34) were males

Distribution of dog bite cases by age category

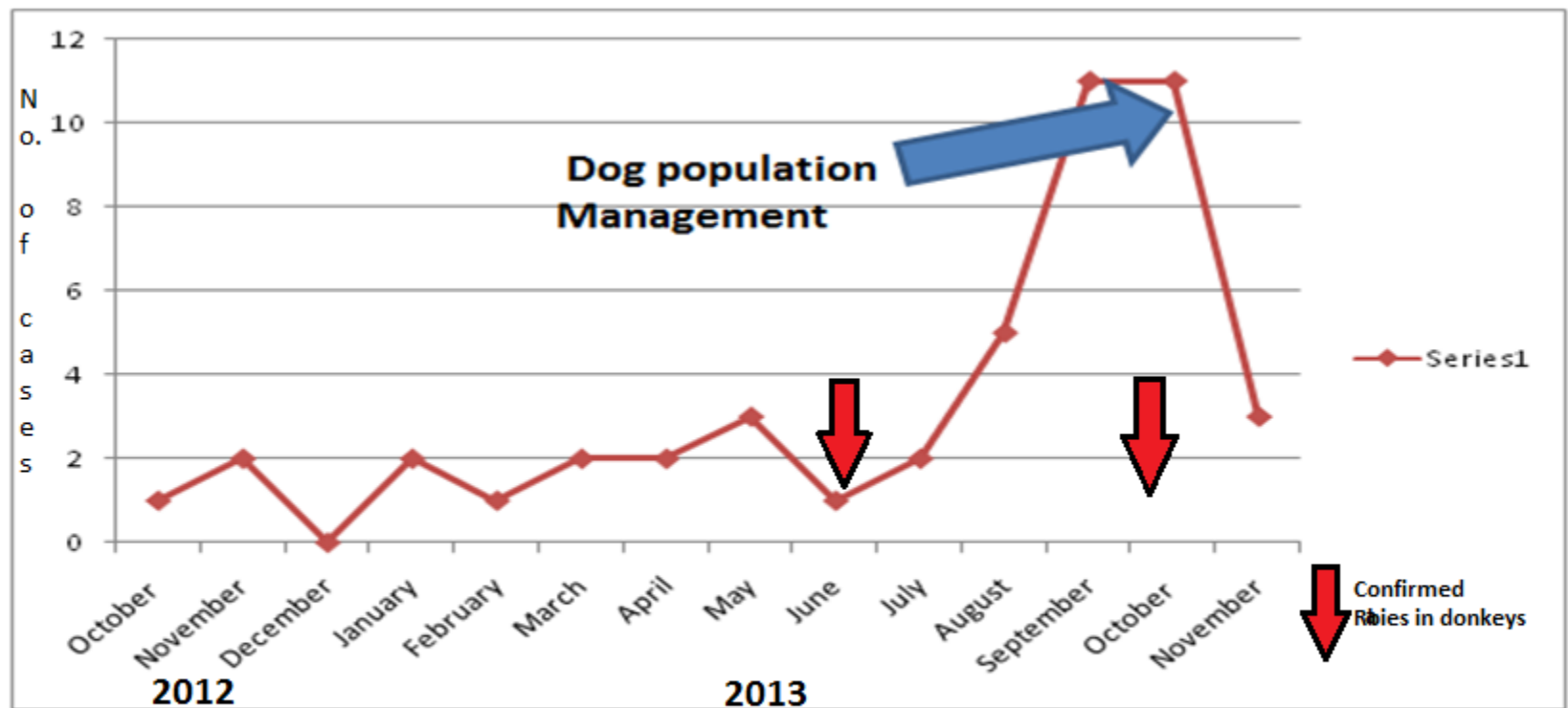
Distribution of dog bite cases by Age
n=43



Post-exposure utilisation

NUMBER OF ANTI-RABIES VACCINE DOSES	NUMBER OF CASES(n=42)	Percentage
1	11	26
2	6	14
3	10	24
4	6	14
5	9	21

Distribution of cases in Lamu county in time - Oct 2012- Nov 2013



2. Active case search

- 20 cases of dog bites, 1 probable rabies exposure death— Case fatality 5%

Age- Mean age 18

-SD 16 year (68% between 2- 34 years)

- Range 3-84 years

Sex- 85% (17) Males

Suspected rabies death

- 11 year old female
- Dog bites to the head, neck and arms
- Died at home a 6 weeks post bite date
- Exhibited nervous symptoms- Shaking of the head, limb paralysis
- Same dog linked to 2 other human bite cases, goat that died with pathognomic rabies sign
- Dog later killed by workers at Lamu port

Bite circumstances 1/2

Time of the day	% (n)
Morning 6-12 am	10 (50)
Afternoon 12am-3pm	2(10)
Evening 4-6 pm	6(30)
Night 6pm-7pm	2(10)

Place of bite	% (n)	Place of bite	% (n)
Victims home territory	65 (13)	Along the road	20 (4)
Neighbours property	15 (3)		

Action preceding bites	% (n)
Totally unprovoked	80(16)
Playing or petting the animals	20(4)

Bite circumstances 2/2

Site of bite	No.	Percentage
Head	14	70
Mid-body/ trunk	3	15
Extremities-arms/legs	3	15

Health seeking behaviour

- 25% (5) of the cases did not seek health care after bite
 - Of the 5, 100% reported self treatment as per Islamic laws as main reason
- High cost of vaccine (90%, n= 19), Lack of vaccine at nearest facility (75%, n=15). Two main reasons for non-completion of PEP dosage
- Mean time between incident and seeking health care – 48hrs, range 1-9 days

Case management

Health care action	% (n)
Anti-rabies vaccine	80 (16)
•At-least 3 doses of anti-rabies	30(6)
Rabies Immuno-globulin	Nil
Tetanus	70(14)
Antibiotics	75(15)
Washed wound with soap and water before reporting to facility	20(4)

Bite characteristics

- Eighty five percent(n= 17) had category III exposure as per WHO classification, 10% (n=2) had category II exposure, rest had category I

Study limitations

- **Active case search**
 - Few cases
- **Retrospective animal bite investigation**
 - Incompleteness of data
 - Missing variables: Biting animal, Nature of animal, remarks on PEP utilization

Conclusion

- Animal bites and rabies is a public health problem in Lamu county
- Inadequate availability of anti-rabies vaccine and rabies immunoglobulin
- Increased number of unvaccinated stray dogs
- Lack of awareness on need to seek immediate medical treatment

Recommendations

- Strengthen collaboration between Human and Animal health professionals
- Ministry of Health- Lamu county
 - Increase supply of anti-rabies vaccine and RIG
 - Enhance public education on need to seek immediate medical attention following animal bites
 - Establish national animal bite surveillance system
- Ministry of Livestock, Agric. Fisheries
 - Rolling out vaccination of pets and livestock – 4000 doses, 2000 by end of Dec
 - Improve dog population control
 - Enhance rabies surveillance in animals

PICTORIAL

Pictorial 1/5



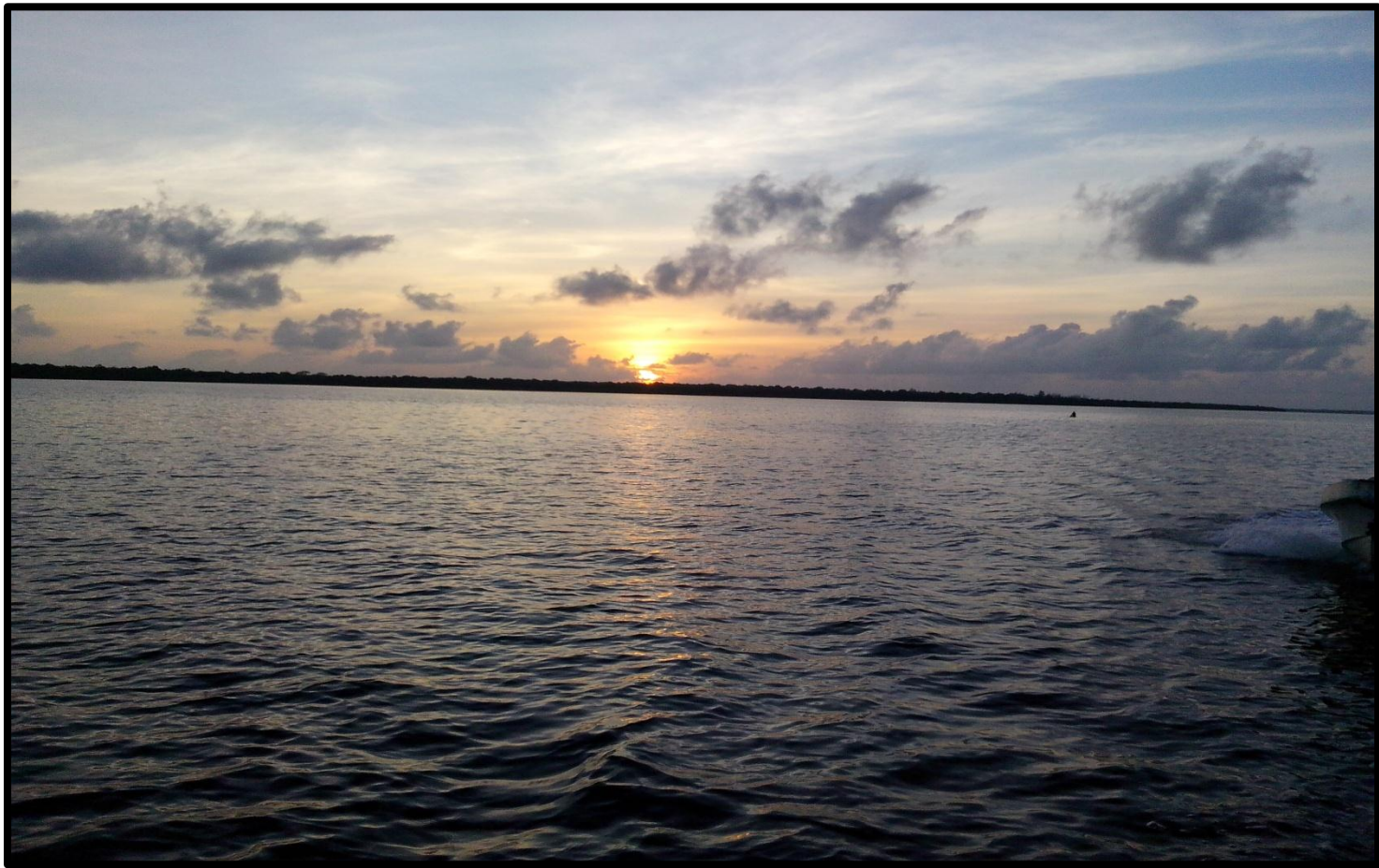
Pictorial 2/5



Pictorial 3/5



Pictorial 4/5



Pictorial 5/5

