

Improvement Of Operational Organization (Myanmar-Leptospirosis)

Meeting -Steering Committee Meeting
Date -27th & 28th Nov 2019
Place -At Vientiane



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ECOMORE 2 Project



Presentation Outline

Multicenter hospital based case-control Study

- Objectives
- Methodology
- Work Flow
- Activity Timeline
- Findings
- Drop out
- Difficultes and Constraints
- Photo Session

Objectives



Primary Objective

- Identify determinants for leptospirosis from laboratory-confirmed human cases in Yangon region, Myanmar.



Secondary Objectives

- To raise awareness and hasten clinical management of leptospirosis cases at hospital level.
- To determine an epidemic threshold (alert threshold) for leptospirosis at hospital level.
- To perform a spatial analysis of the confirmed human cases to investigate which aspects of the landscape and land use patterns are important in the transmission of leptospirosis.
- To set up the capacity of the NHL to diagnose Leptospirosis (Bacteriology Unit) and help to identify the circulating strains of pathogenic *Leptospira* in the area.

Methodology



Material And Methods

- **Location of the Study :**
Yangon Municipal Area (**total 33 townships**)
- **Period of Study :**
Pilot Phase from 20th Sep 2018 to 20th Dec 2018 (3 months)
Implementation phase started from May.2019
- **Study Design:**
Case-control study



Material And Methods

Inclusion criteria

1. Patients admitted to IPD/OPD in the 10 Selected Hospitals
2. Patients Living in Yangon Municipal Area for one month at least before recruitment.
3. Patients with age ≥ 5 years



Material And Methods

Inclusion criteria (cont:)

4. Patient had fever within 1 months with no obvious source of infection and at least 2 out of the 4 following symptoms

- Muscle pain, especially calf muscle
- Jaundice
- Headache
- Conjunctiva Suffusion(Bilateral)

5. Patients or the accompanying person gives a written informed consent (including Household visit and 2nd time sample)



No.	Hospital	Area	NO. of Bedded
1	Hlaing Thar Yar General Hospital	Peri-urban	500
2	Insein General Hospital	Peri-urban	500
3	North Okkalapa General Hospital	Peri-urban	800
4	Thanlyin General Hospital	Peri-urban	200
5	Thingangyun Sanpya Hospital	Peri-urban	500
6	East Yangon General Hospital	Urban	200
7	West Yangon General Hospital	Urban	200
8	Yangon General Hospital (T & I D)	Urban	2000/200
9	New Yangon General Hospital	Urban	200
10	Yankin Children Hopsital	Urban	550

Material And Methods

Statistical methods

1. Epi-Data for data entry
2. STATA or R software for statistical analysis.



Clinical suspicion of Leptospirosis

Faine's modified Score (part A) ≥ 12 at OPD

Written informed consent

Suspected Case

Analysis algorithm

1st sample collection at OPD

d0: 1 plain tube (4ml)

2nd sample collection at the patient household

d10-14: 1 plain tube (4ml)

① Rt-PCR

PCR positive

Confirmed case

PCR negative

Right after

② Anti-leptospiral IgM ELISA

1st IgM ELISA positive

Probable case

1st IgM ELISA negative

2nd IgM ELISA positive

Titer increase

Confirmed case

2nd IgM ELISA positive

Titer \leq

Probable case

2nd IgM ELISA positive

Confirmed case

2nd IgM ELISA negative

Negative case

DNA Positive extracts

Genotyping

Identification of serogroup (IPNC external support)

MAT on ELISA positive sera

Identification of

serogroup (IPNC

external support)



Work Flow



Work Flow (At Hospital)-Pilot Phase



Patient



OPD/IPD



Consult with
Duty MO



Screening by
**National
Coordinator**



Take Blood
Sample



Keep in the
Hospital' Lab



Project Car



NHL,
bacteriology
unit

Work Flow (After Discharge From Hospital)



National
Coordinator



House hold visit
(with or without
phone contact)



2nd sample
taking and
Household form
filling

Activity Timeline



Activity Timeline

**2018
September
Ethical
approved**

**2019 January
– April Pilot
evaluation**

**2019 May– 2020 March
Implementation**

**20 September
2018 to 20
December 2018
Pilot Phase**

**2019 May-
Workshop
and MO
recruitment**

**DHF
sample
collection**



Work Flow (At Hospital)- Implementation Phase



Patient



OPD/IPD



Consult with
Duty MO



Screening by
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Keep in the
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Project Car



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Work Flow (After Discharge From Hospital)



National
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House hold visit
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FINDINGS



3,831 Leptospirosis Suspected patients received treatment
at 10 selected Hospitals up to September 2019
(Total 9 months including pilot phase).

323 patients are met with
Inclusion criteria

110 patients (**34%**) are
Leptospirosis case

60 patients are
Confirmed cases
(18 patients (30%)
are **PCR +ve**)

50 patients are
Probable cases
(1st ELISA +ve)

3,508 patients are excluded

- out of the selected 33 townships
(Ygn Municipal Area)
- other obvious source of infection
- age < 5years
- less than 2 out of 4 symptoms
- No Consent

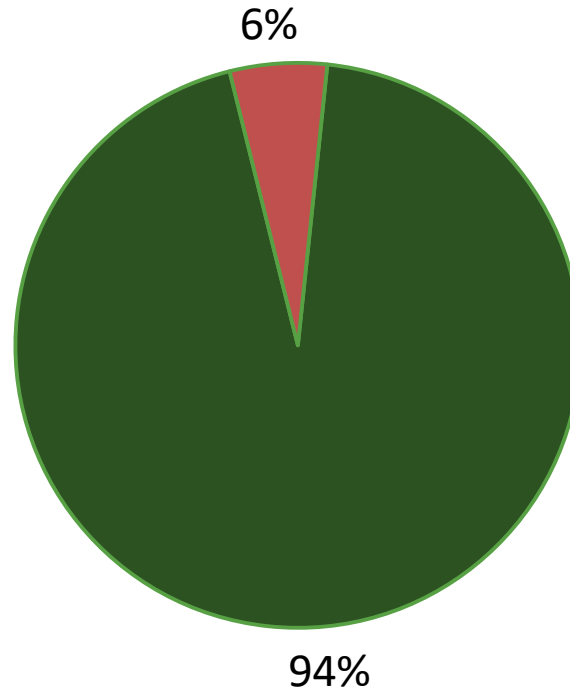


Hospital' Admission Status of Leptospirosis Confirmed by PCR +ve

- Hospitalized Patients (n=17)
- OPD Patients (n=1)

-In total 110 Leptospirosis cases , 60 patients are confirmed cases.

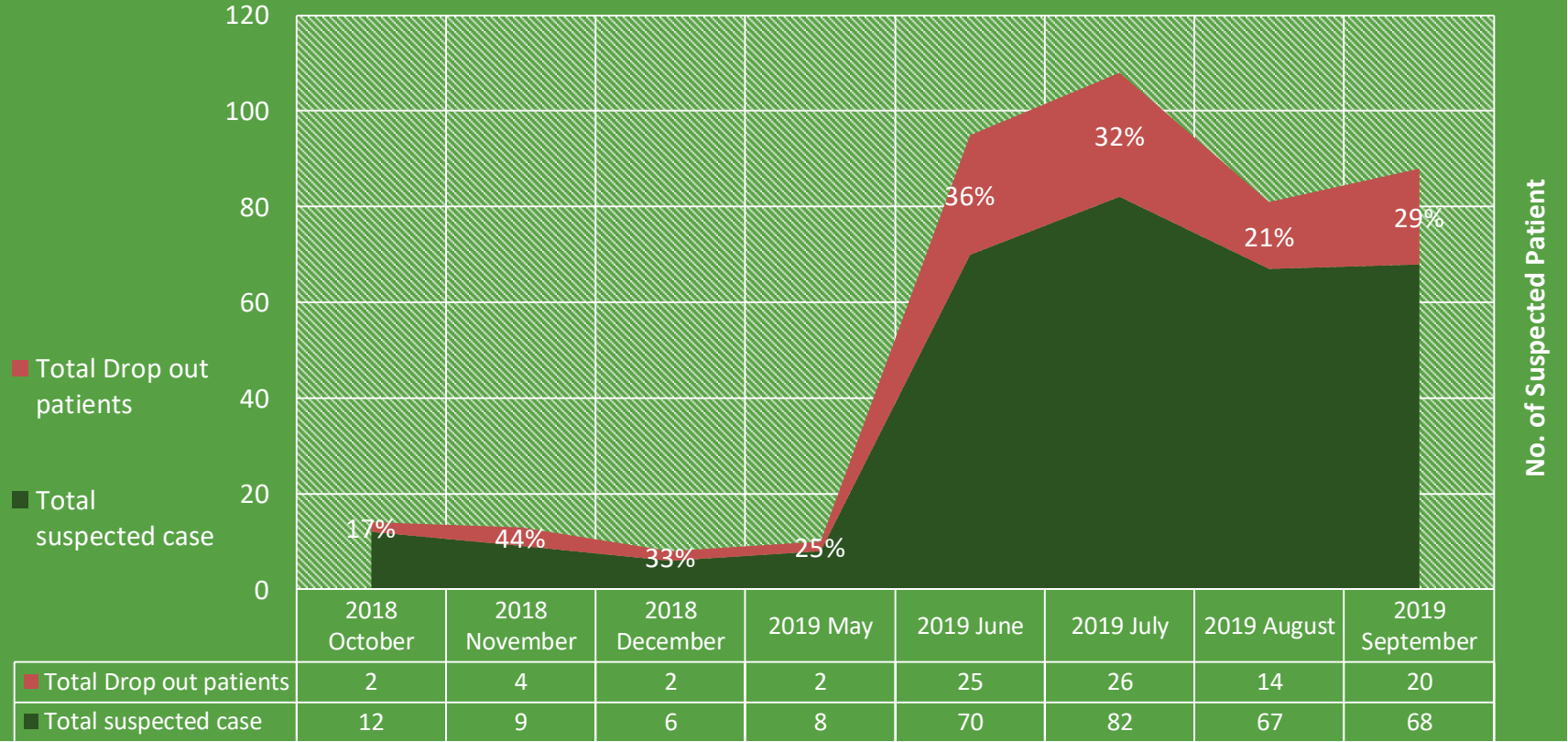
-Among them 18 patients are confirmed by PCR .



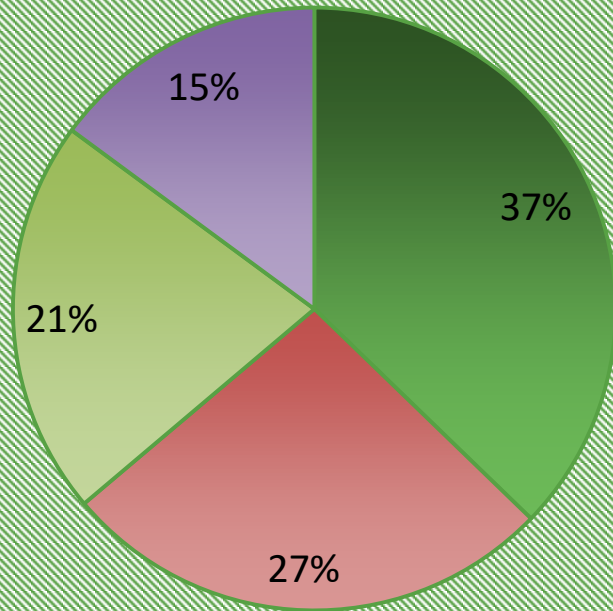
Drop Out



Total Drop Out %



Drop Out Reasons %



■ Cannot contact (n=35)

■ Expired (n=25)

■ Patient refuse (n=20)

■ Traveling to out of project area (n=14)

Drop Out Reasons

Even though we have got informed and written consent from patients for 2nd time blood sample.

1. Expired cases

2. Refused
 - Child
 - Patients got fully recovered
 - Job nature



Drop Out Reasons

3. Traveling out of project Area
 - Go back Hometown
 - Going Pilgrimage

4. Cannot Contact
 - Changing new SIM card
 - No phone, wrong number
 - Incomplete address (slam areas, migrants)



DHF (-)ve Sample



141 DHF(-)ve samples received

43 samples were tested Leptospirosis

98 samples were excluded

- Not enough samples amount to run
- <5 years of age
- No labeling or Incomplete patients information

2 samples (5%) are
PCR +ve

41 samples are
PCR -ve

1 sample
(2%) is
ELISA +ve

2 samples
(5%) are
Equivocal

38 samples
are ELISA -
ve



Limitation to collect DHF(-)Sample

- Dengue testing are being done in Wards, which mean Labs are not receiving Dengue samples in some hospitals.
- We don't have the address and other relevant information of received samples.

Interesting Point- Some DHF +ve patients are also +ve Lepto which seen in our preliminary result



Difficulties And Constraints

- Catching patient at Household without phone contact
- Early Case Detection rate; PCR (+)ve rate at OPD
- Inclusion Criteria-Patients Living in Yangon Municipal Area for one month at least before recruitment.



Conclusions

- % of Leptospirosis cases are more than we expected. (34%)
- Most Early Detected cases (PCR + ve cases) can detected in IPD.
- Consequences of Using more budget for Project Medical Officers, Recruitment rate of Suspected case is dramatically↑
- Dengue negative patients should be tested leptospirosis
- Awareness of leptospirosis cases at hospital level is increased.

Way Forwards

- Collaborate with authorized persons from Hospitals (TMO, Prof:)for raising awareness by sharing the findings
- To reduced the Drop Out , we will do brainstorming session with Project Mos
- Welcome your advise, comments and suggestion anytime

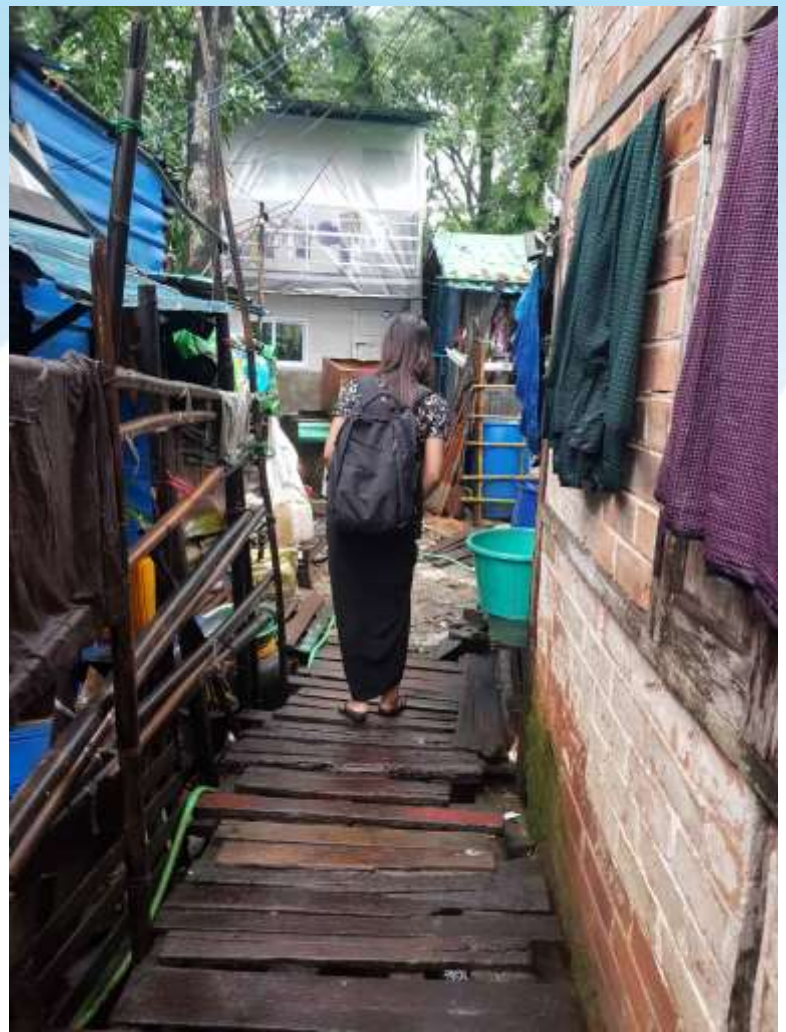


PHOTO SECTION















THANK YOU
FOR YOUR ATTENTION

