

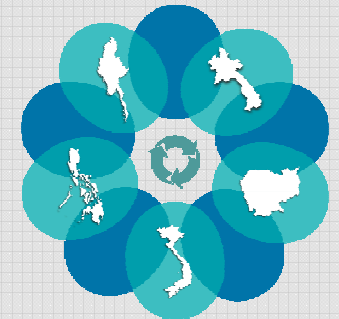
# Steering Committee 15-16 January 2019 - Hanoi

## Lab testing and epidemiological result of the pilot phase and corrective approach in Myanmar

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ECOMORE II



WP MYANMAR

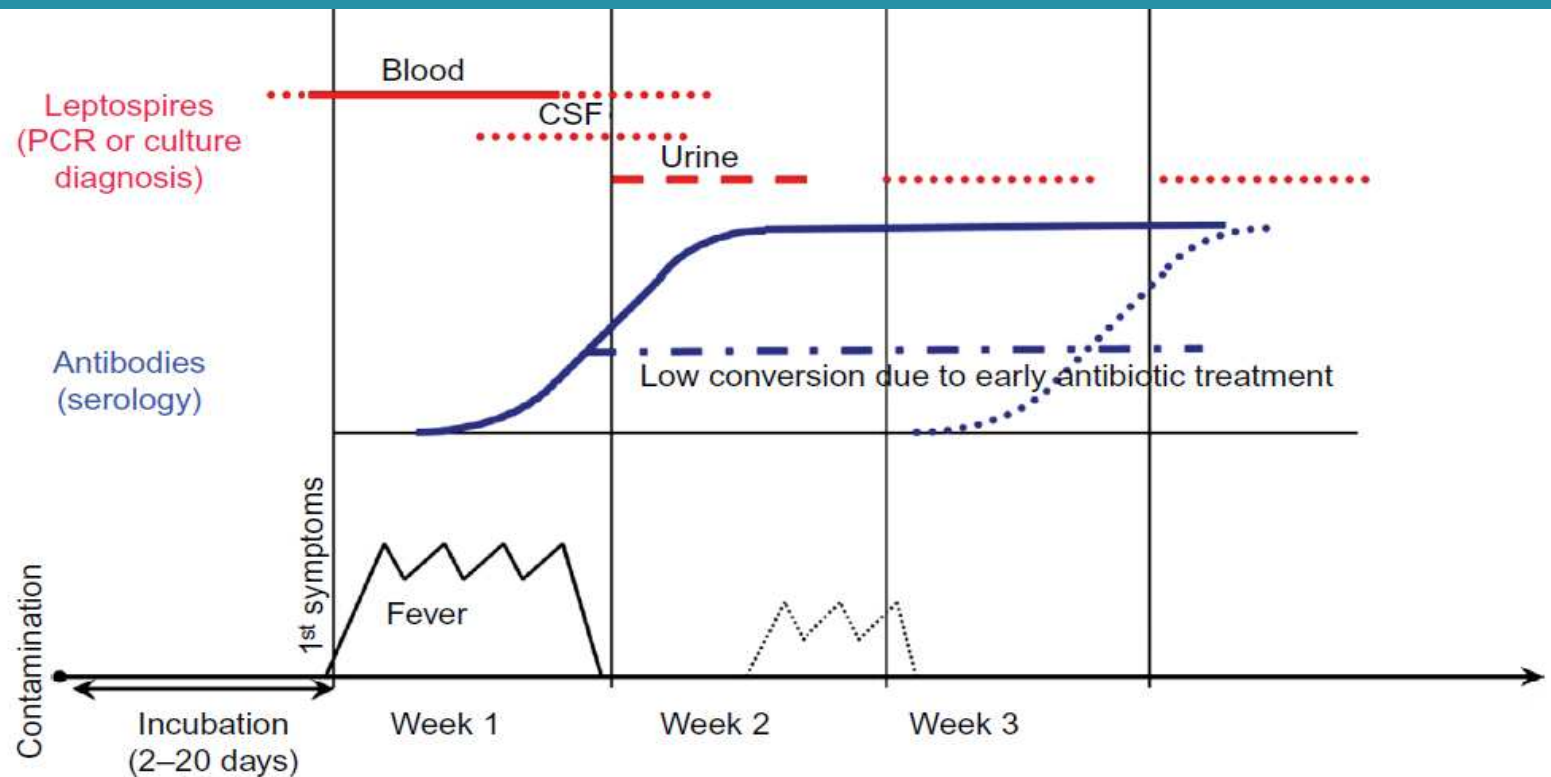
Lab  
Testing

Pilot  
Phase  
Data



# Lab Testing

# Biological Diagnosis of Leptospirosis



**Figure 3** Basic principles underlying the biological diagnosis of leptospirosis.

**Notes:** Adapted from Turner. *Leptospirosis I. Trans R Soc Trop Med Hyg.* 1967;61(6):842-855,<sup>124</sup> by permission of Oxford University Press.

**Abbreviations:** PCR, polymerase chain reaction; CSF, cerebrospinal fluid.

# Capacity building at NHL:

## **Trainings**

- Regional training on *Leptospire* and *Leptospirosis* at IPNC
- Training on qPCR by C. Goarant at NHL
- Training on MAT at NIHE

## **Equipment received to improve diagnosis at NHL**

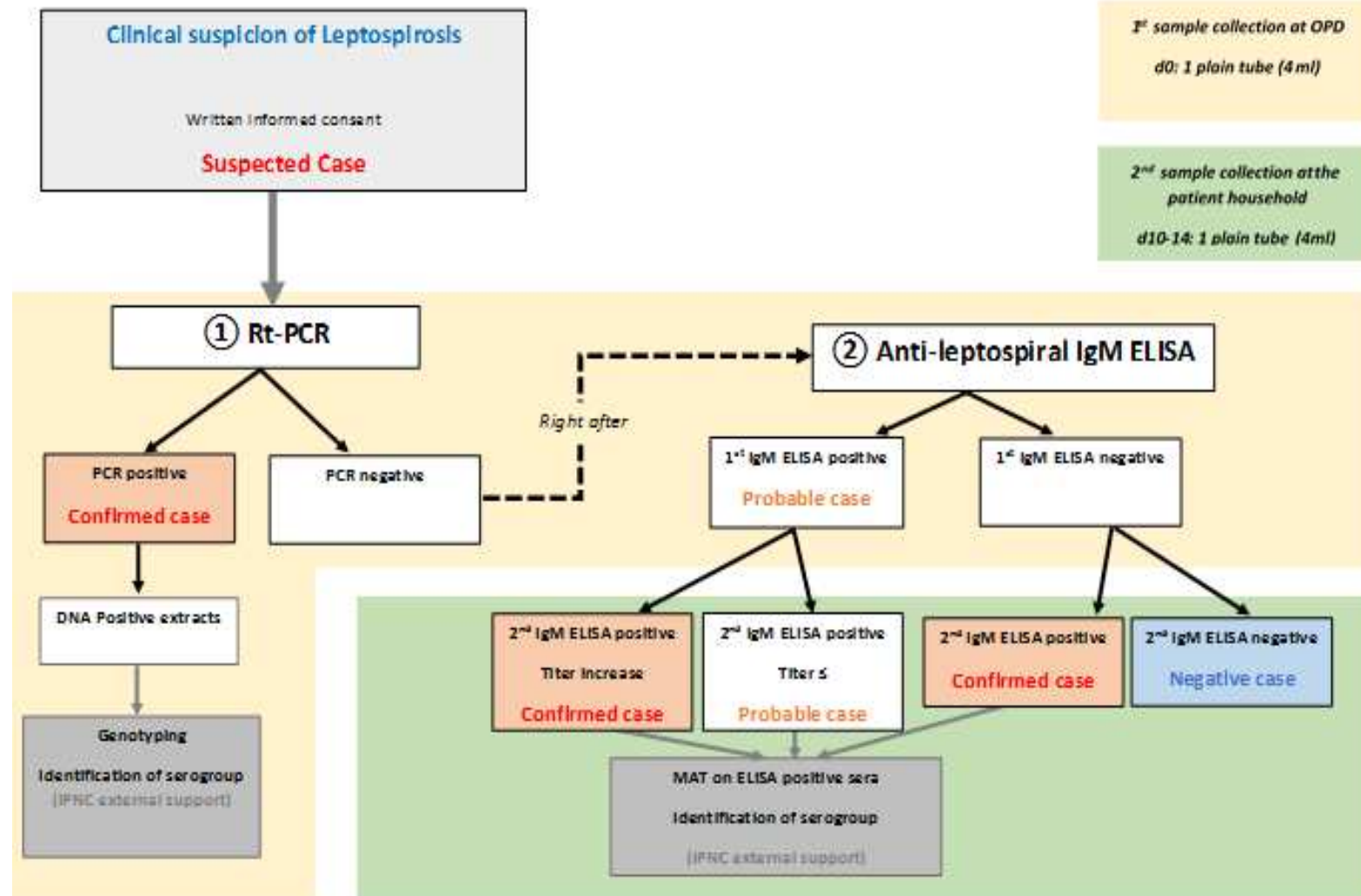
- -80 C freezer - (1) pc
- Suzuki Ertiga 2018 (1)
  - Small materials like
- Mini Spin/Mini Spin plus centrifuge (2) pcs
- Voltex Mixer - (1) pc
- Automatic pipettes- (10) pcs
- cold tray for small tubes-(3) pcs
- Laptop (1) for laboratory
- Dry batteries (2) pcs for PCR machine


# Currently Available Tests for Leptospirosis at N.H.L

- ELISA IgM
- Rapid test kit (IgM / IgG)
- qPCR



# Analysis Algorithm for case classification





# Pilot Phase Data



## Number of cases (n=28)

Confirmed  
Case 21%  
(n=6)

Negative  
Case 25%  
(n=7)

Probable  
Case 36%  
(n=10)

Equivocal  
4% (n=1)

Inconclusive  
14% (n=4)

For Data Analysis as  
Case and Control

# Hospital Code

1. YGH = Yangon General Hospital
2. NYGH = New Yangon General Hospital
3. EYGH = East Yangon General Hospital
4. WYGH = West Yangon General Hospital
5. YKCH = Yankin Children Hospital
6. NOGH = North Oakkalarpa Teaching and General Hospital
7. TSGH = Thingangyun Sanpya General Hospital
8. IGH = Insein General Hospital
9. TGH = Thanlyin Hospital

## Leptospirosis confirmed cases (n=6) by Tests

Hospital	PCR Positive	ELISA Positive (Titre-Increase)	Seroconversion	Total Confirmed Cases
IGH	2	2		4
NOGH	1			1
TSGH		1		1
Total Confirmed Cases	3	3		6

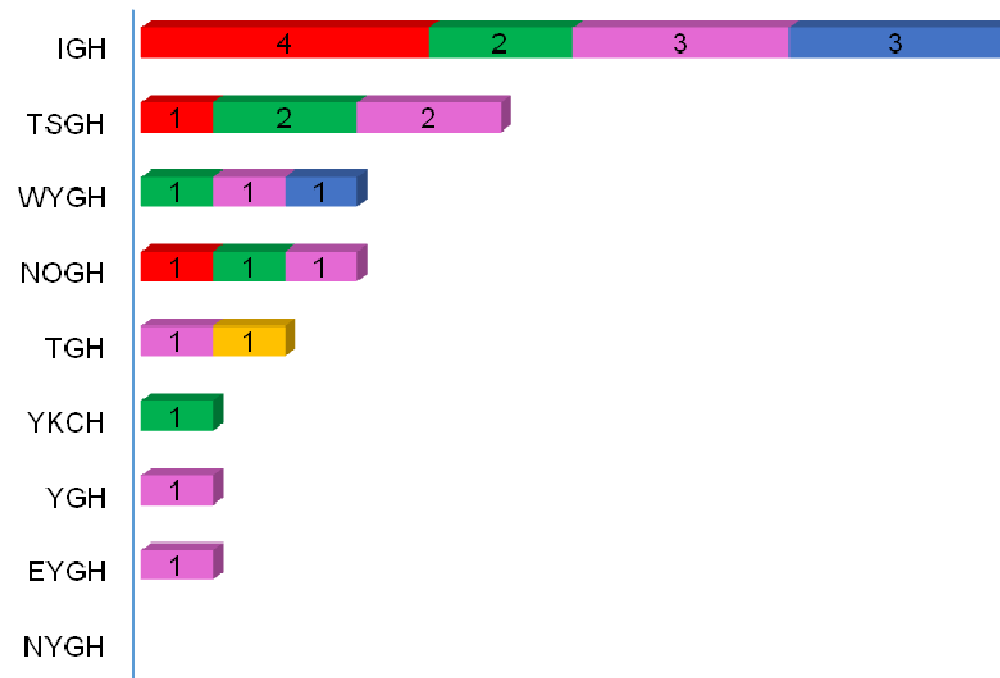
# Leptospirosis confirmed cases (n=6) by Patient's Professional

- Transportation worker (n=1),
- Construction worker (n=2),
- Gardener (n=1),
- Food service worker(n=1) and
- General worker (n=1).

# By Hospital

## Leptospirosis cases (n=28) by hospital (n=9)

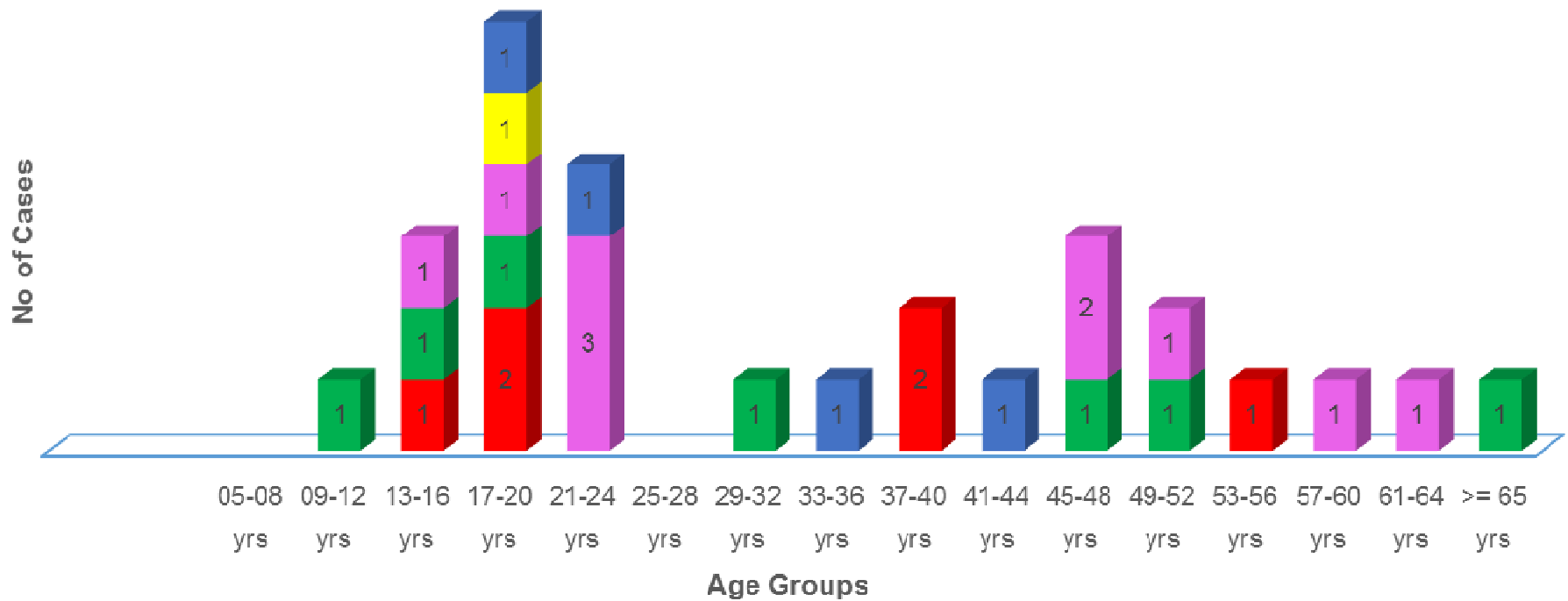
■ Confirmed case ■ Negative case ■ Probable case ■ Equivocal ■ Inconclusive



# By Age groups

Leptospirosis cases (n=28) by age groups (n=16)

Confirmed case Negative case Probable case Equivocal Inconclusive



# Cases by Gender

Type of case	Male	Female	Total
Confirmed case	6		6
Negative case	4	3	7
Probable case	9	1	10
Equivocal	1		1
Inconclusive	4		4
Total Suspected Cases	24 (86%)	4 (14%)	28

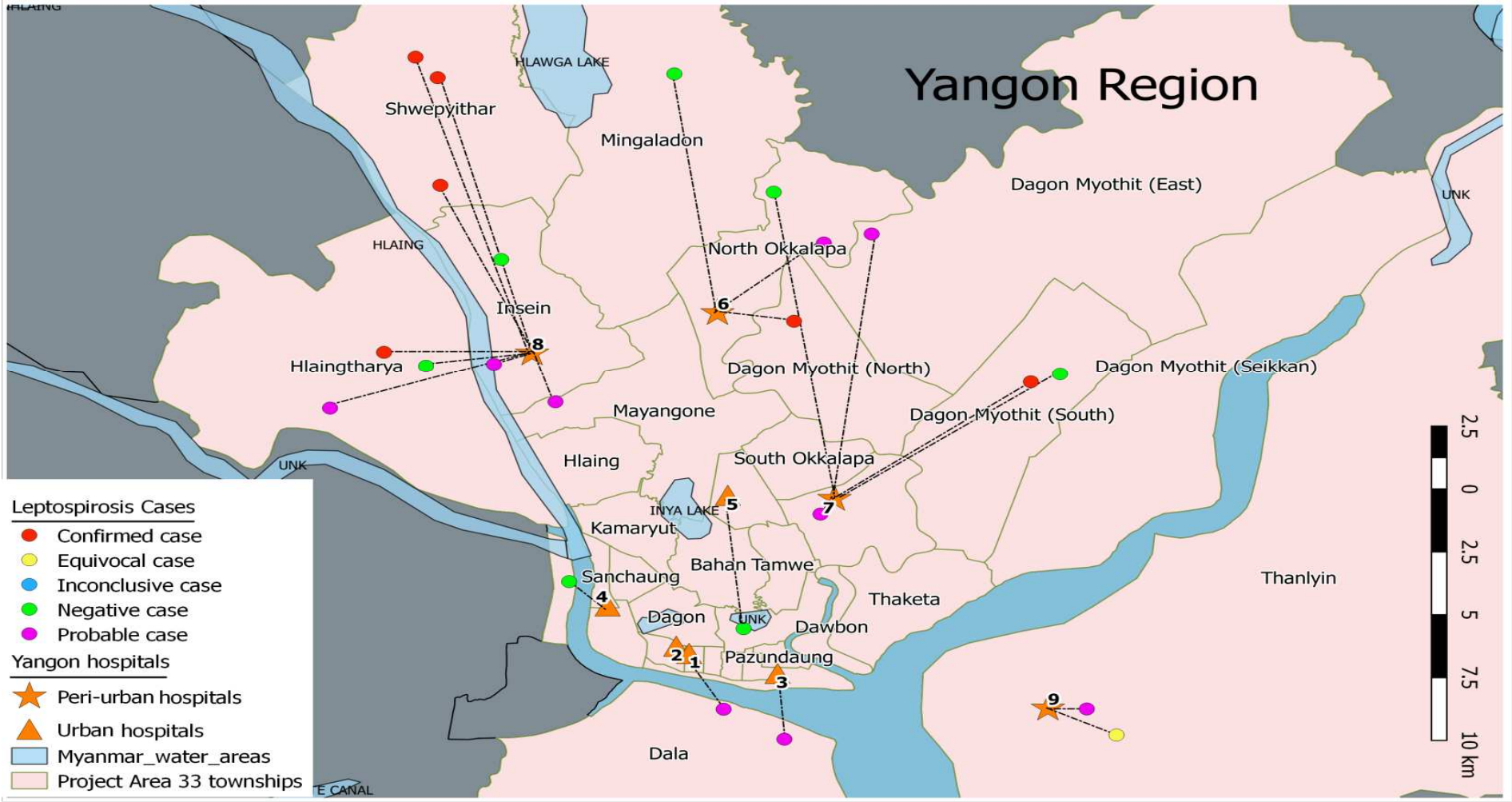
# By Month-Hospital

Month-Hospital	Confirmed case	Negative case	Probable case	Inconclusive	Equivocal	Total Suspected Case
<b>Sep-18</b>			1			1
YGH			1			1
<b>Oct-18</b>	2	4	3	2	1	12
TSGH	1	2	2			5
IGH	1	1		1		3
TGH			1		1	2
WYGH				1		1
YKCH		1				1
<b>Nov-18</b>	3	1	4	1		9
IGH	2		2	1		5
NOGH	1	1				2
EYGH			1			1
WYGH			1			1
<b>Dec-18</b>	1	2	2	1		6
IGH	1	1	1	1		4
NOGH			1			1
WYGH		1				1
<b>Total</b>	<b>6</b>	<b>7</b>	<b>10</b>	<b>4</b>	<b>1</b>	<b>28</b>



# By Township and Hospital

Leptospirosis Cases (n=23) by Hospital (n=9) and Township (n=33)



# Conclusions

- ❑ Why no case in NYGH,  
Only 200 bedded, mostly referred cases, old clients of resident physicians, situated Near YGH ,so referred case like poisoning cases only visited. Patients out of Yangon Region mostly visited
- ❑ Why more cases at IGH  
This is the referred hospital from periurban areas like Shwepyithar township and Hlaingtharya township, good cooperation of resident physicians, included in 3 hospitals selected for pilot phase by both OPD and IPD
- ❑ Why most of confirmed cases are from Shwepyithar Township  
due to geometrical near lakes and rivers, behavioral like poor waste disposal, economical (poor), no proper drainage systems
- ❑ There is no confirmed case by seroconversion.
- ❑ Why Male: Female ratio is 6:1 (n= 24:4) and all confirmed cases were male.  
It might be due to occupational reason.
- ❑ It had not reached to the case: control ratio 1:2 even the control did not match to case (cases (n=6) - control (n=7)). Negative controls did not match with confirmed case by means of three criteria in protocol: age range (plus or minus five years), same hospital and same week of consultation **because only few cases in total.**

# Recommendations

- Fixed Inclusion criteria include “no obvious source of other **infection**”. There was a PCR positive Leptospirosis confirmed case (ID 60011) with TB history. So the definition of “**infection**” should be clarified more specifically. Dr Cyrille (IPNC) and Dr Patrice (IPC) recommended **to change that criteria as “no obvious source of other acute infection”** in mid December 2018.
- **Need to improve mapping to include environmental data, to create dynamic mapping.**
- **Need to improve screening at OPDs by implementing better KT at each hospital level**
- **Need to involve more hospital in peri-urban area where obviously most cases are identified**
- **Need to improve selection of cases control to identify risk factors**

# Future tasks

- two more hospitals in Shwepyithar township and Hlaingtharya township based on feasibility assessment and survey because many confirmed cases came from there
- to revise data collection tools CRF to be more simple, distinct, easy to use and feasible with the real ground condition
- to implement Surveillance of Leptospirosis in dogs at YVDL (Yangon Veterinary Diagnostic Laboratory) in April 2019 because it has not been initiated the project running phase yet.
- MAT and genotyping at IPNC: capacity building and identification of strains circulating in Yangon**

Animal health

at  
YVDL  
(Veterinary  
Diagnostic  
Laboratory)

- Project period – April 2019 to March 2020 for surveillance of leptospirosis in Dogs

### **To Do List**

- budget transfer
- recruit full-time Veterinarian Coordinator
- support a laptop, RDTs and small materials
- meeting with veterinarians from animal shelters and vet clinics
- trainings

A laboratory technician from YVDL will be trained

- on leptospirosis PCR at NHL and in trainings organized by external lab experts.
- on Micro-Agglutination-Technique (MAT), jointly with technicians from NHL and NIHE (Hanoi-Vietnam) at Institut Pasteur in New Caledonia

# Meetings

- National Stakeholders Meeting –early August 2018 bring together stakeholders involved in this ECOMORE2 component and especially Medical Doctors from 9 selected hospitals to discuss on methodology and SOPs.
- Working Group Meeting – end of August 2018 joined by medical superintendents, medical doctors, lab technicians from 9 selected hospitals, IPC experts, NHL team, Leptospirosis expert for case definition, workflow and CRFs.
- Next meetings at each hospital level to reinforce awareness and identification of suspected cases



Thank  
You