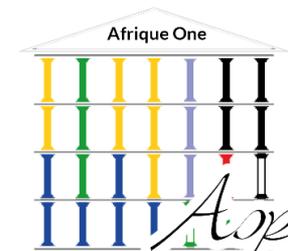


How One Health and Integrated Bite Case Management (IBCM) approaches improve rabies case detection and response: country experiences (Tanzania)

Presenter: Kennedy Lushasi

Ifakara Health Institute-Tanzania



www.afriqueoneaspire.net

Background



- To support the 'Zero by 30' goal, United Against Rabies advocate:
 - Scaling up mass dog vaccination
 - Improving access to Post-exposure Prophylaxis (PEP)
- Implementing mass dog vaccination is expected *reduce rabies incidence in dogs* and therefore also reduce:
 - human rabies exposures,
 - human rabies deaths
 - demand for PEP
- But surveillance to quantify these impacts is limited

Project aim



- We aim to enhance rabies surveillance in Tanzania using **Integrated Bite Case Management (IBCM)** to quantify:
 - Bite patients & PEP demand
 - Rabies exposures & human rabies deaths
 - Animal rabies cases
- Operationalize a ‘One Health’ approach linking health and veterinary workers

[Lushasi et al. 2020: https://www.frontiersin.org/articles/10.3389](https://www.frontiersin.org/articles/10.3389)

IBCM protocol

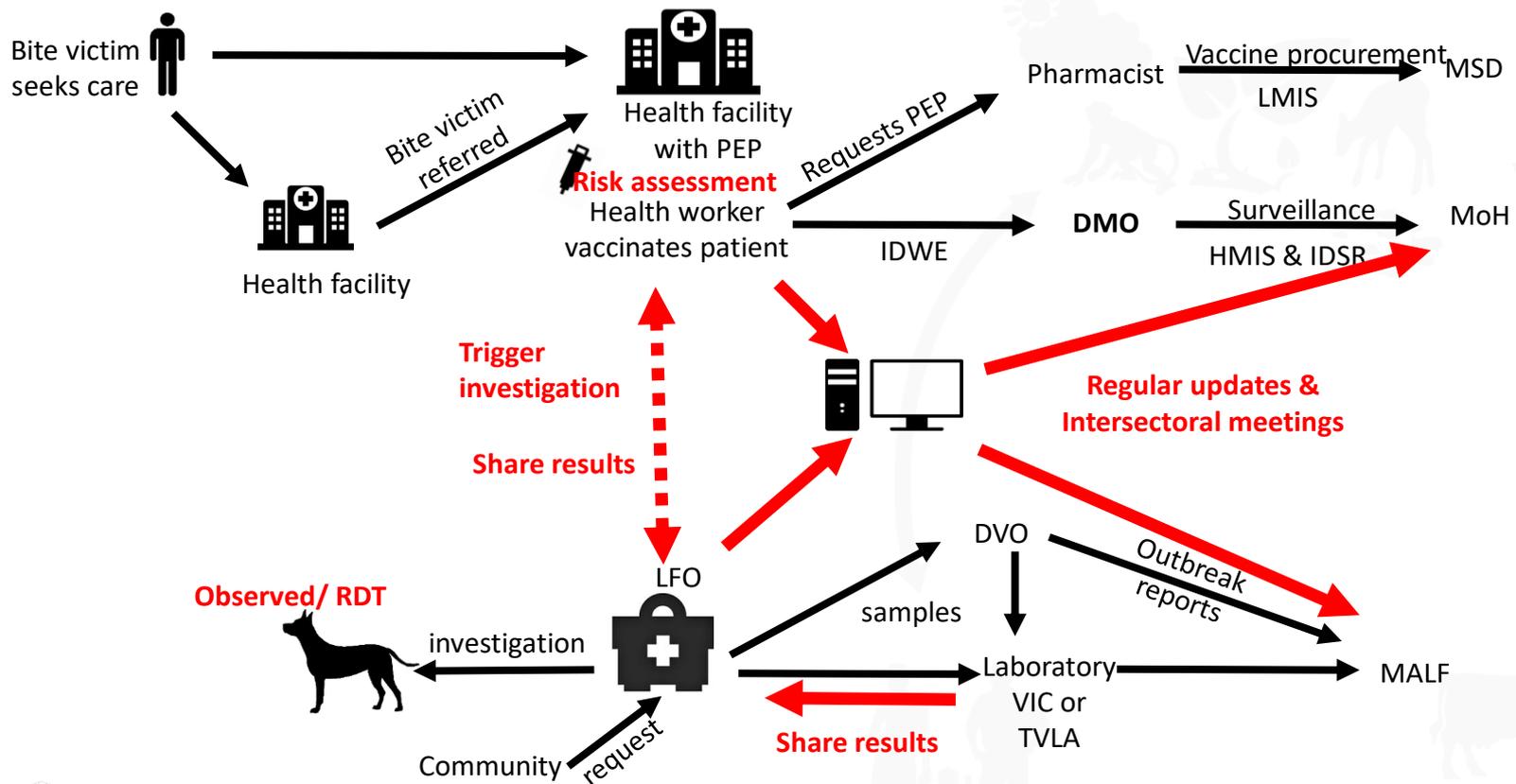


1. Health worker records bite patient presenting at health facility & completes a **risk assessment**
2. If a high-risk bite is identified, the veterinary sector (livestock field officer) is notified that an **epidemiological investigation** is required
3. Livestock field officer conducts **epidemiological investigation** to assess the status of the biting animal & reports results back to health sector

Previous surveillance & reporting



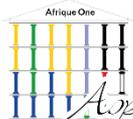
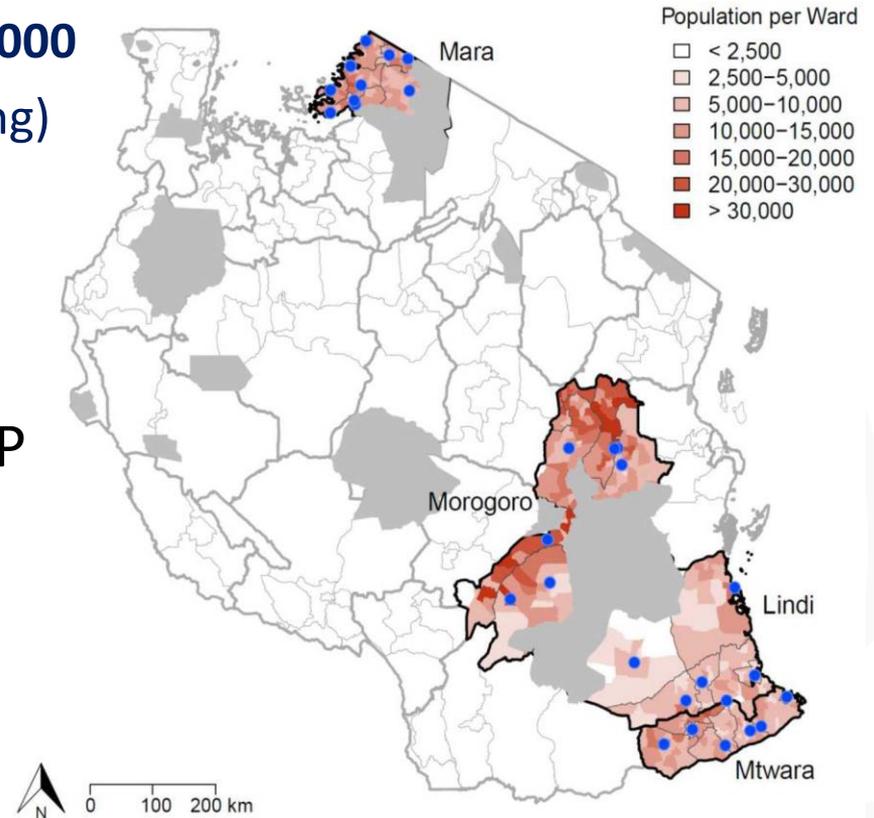
Additional IBCM steps



Study site



- 20 districts of 4 regions of Tanzania
 - Total human population served 7,100,000
 - Variable population density (red shading)
 - Wildlife protected areas (grey)
 - Average human:dog ratio ~30:1
- 35 health facilities with IBCM & PEP



Bite patients and assessments of high-risk bites increased with IBCM

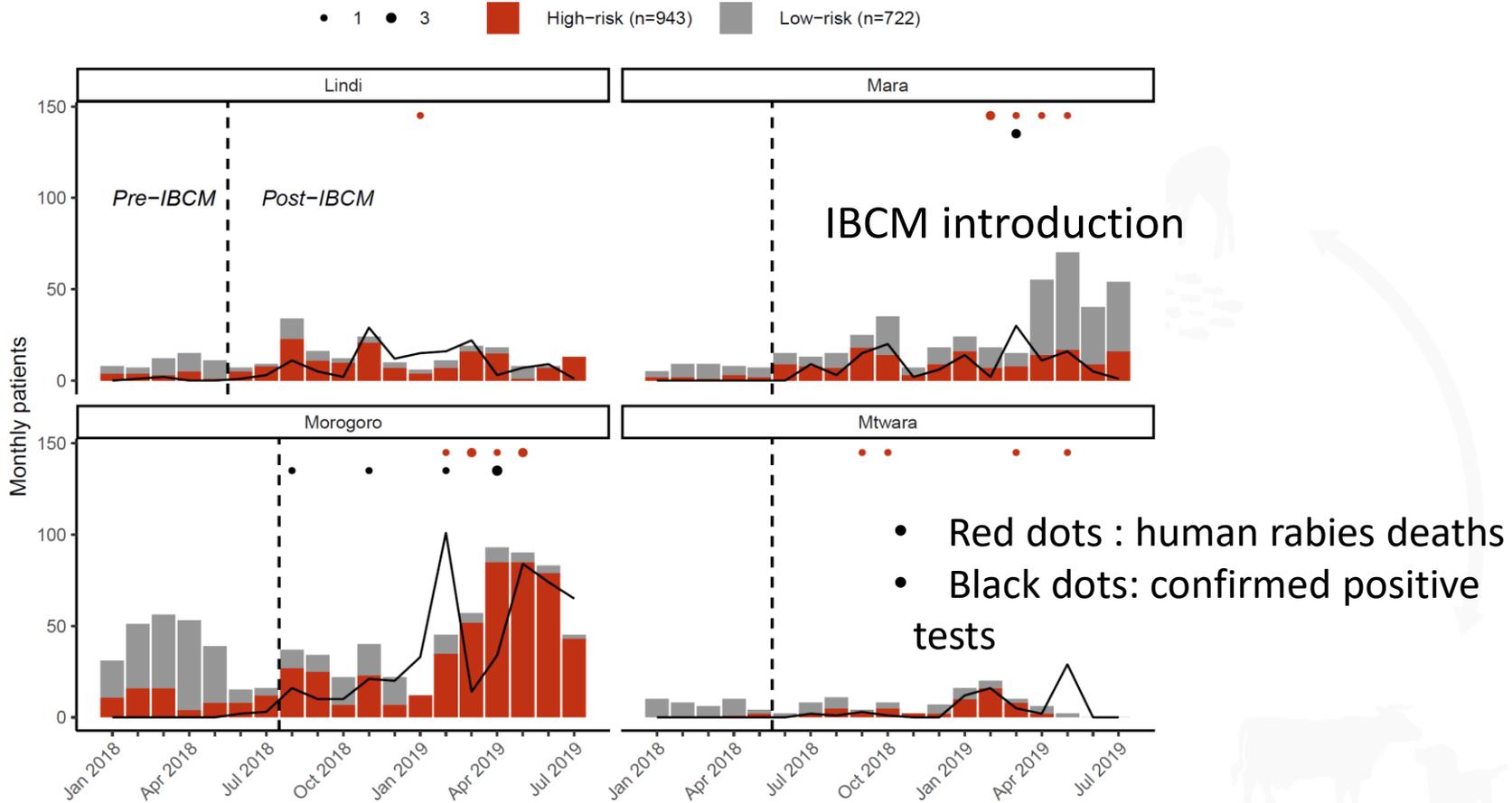


- Pre: avg 55.7 (range: 15-86) new patients/ month, 26.9% high-risk
- Post: avg 92.2 (range: 15-174) new patients/ month, 64.9% high-risk

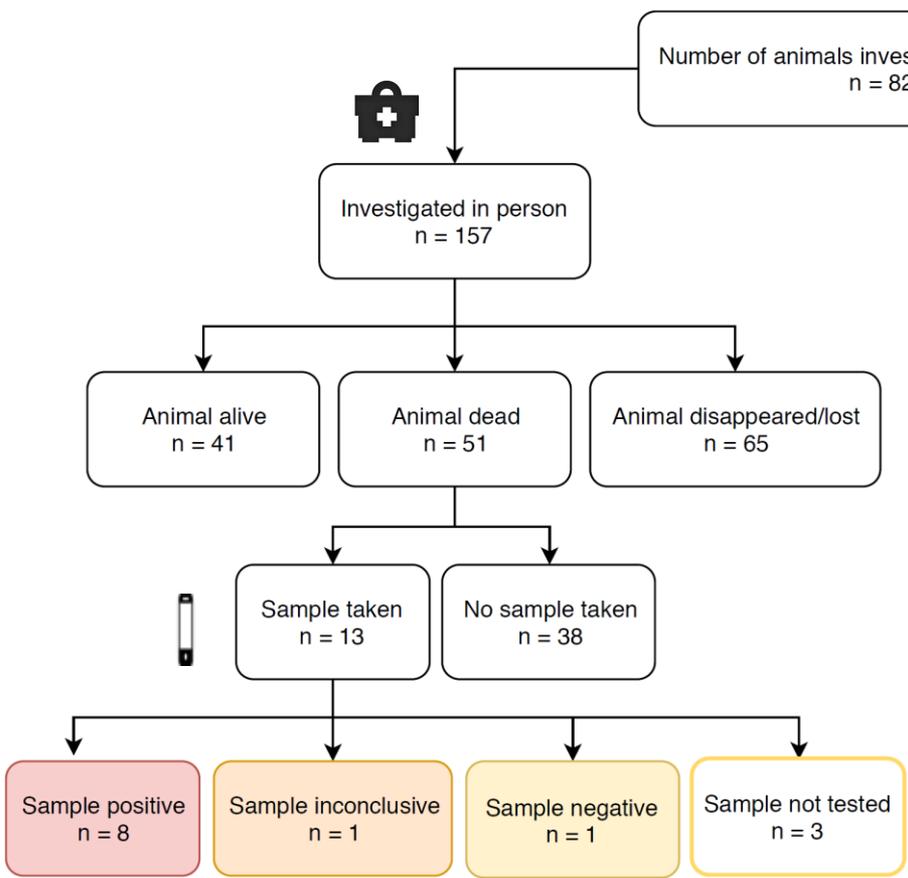
| Region | Pre-IBCM | | Post-IBCM | |
|----------|-------------------------------|-------------|-------------------------------|-------------|
| | Presentations / 100,000 /year | % high-risk | Presentations / 100,000 /year | % high-risk |
| Lindi | 15 | 31.5 | 19.4 | 76.0 ** |
| Mara | 5.2 | 26.3 | 20.1 | 39.1 |
| Morogoro | 28.1 | 28.8 | 22.6 | 82.9** |
| Mtwara | 7.2 | 7.9 | 6.7 | 59.0** |

* $p < 0.05$, ** $p < 0.001$, by chi-square

Bite patients and assessments of high-risk bites increased with IBCM



Lots of investigations conducted but more and faster sample collection needed



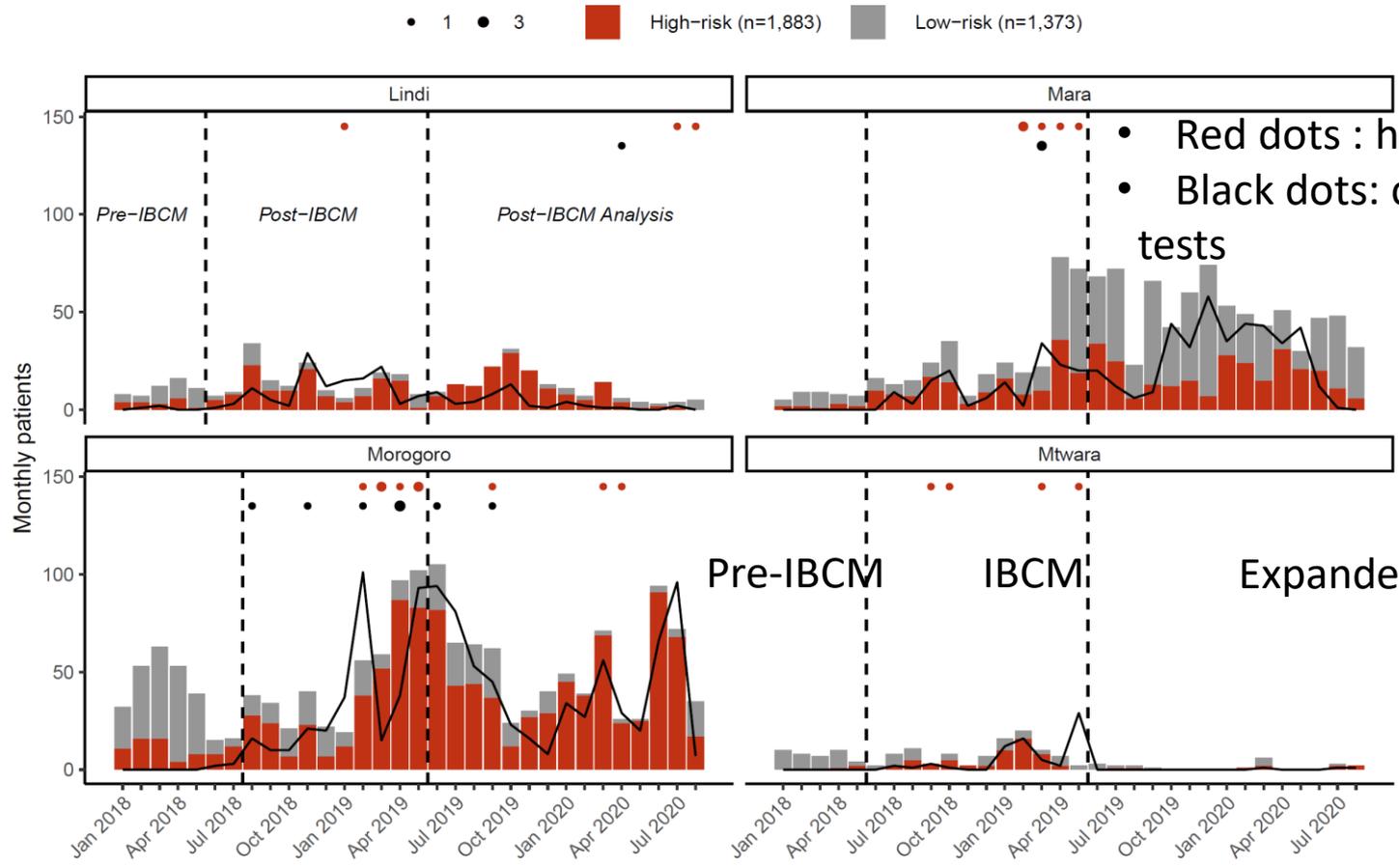
- 49.1% (404/823) of biting animals showed at least 1 sign of rabies or Rapid Test positive
- 21.5% (177/823) assessed as healthy
- 4.9% (40/823) assessed as sick (other cause)
- 24.5% (202/823) classified as unknown

Conclusions



- IBCM dramatically improved rabies detection & communication between sectors
- Main challenges:
 - limited training of health workers in rabies
 - perceived burden of real-time recording
 - limited resources for livestock field officers to investigate
- IBCM has potential for monitoring impact of mass dog vaccination
- Implementation research needed to establish best practice & applicability to other settings

Scaling up IBCM shows endemic rabies in some regions and reduced circulation in others



- Red dots : human rabies deaths
- Black dots: confirmed positive tests

The effects of Covid 19 Pandemic to the implementation of IBCM



- Limited in person investigations by LFOs in fear of contracting the disease
- Few bite patients went to the health facilities to seek to PEP
- Some major health facilities suspend some common outpatient services at the peak of the outbreak
- Delay in scaling surveillance as per initial timeline

Acknowledgements



1. Special thanks to my supervisors and mentors;

- Prof Katie Hampson & Dan Haydon (UoG)
- Dr Emmanuel Mpolya (NM-AIST)

2. Host Institution (IHI) & project staff

3. Project Funders

- Wellcome Trust
- AfriqueOne – Aspire

4. The government of the United Republic of Tanzania

- Ministry of health
- Ministry of livestock development