

# Study design

Q1: What types of study designs

# Aims:

- To design epidemiological study (studies) that will enable a Phase 3 trial to be undertaken, and to inform vaccine decision-making should a safe and effective vaccine become available

# Before embarking on main epidemiological study

- Systematically collate and analyse and publish data already available
  - Comprehensive review of what we know about LF at the moment
- Also identify if there are existing serum banks or other resources that could be used to facilitate the main epi survey

Q1) Estimate the age-specific incidence of infection and disease (including the full range of severity) in well-defined populations

**Design summary: prospective cohort study with active follow-up**

1. Select a number of well defined high-risk populations, based on existing data on case loads that are relatively stable and served by well-defined health facilities
2. Recruit H-H (GPS) from these communities (note 1). Obtain baseline H-H data, demographics, risk status and knowledge and attitudes towards LF.
3. Obtain baseline serological status of participants
4. Follow-up for at least 1 year (possibly more)
5. During follow-up, actively case-fine. Home visits every 1-4 weeks (tbd). Those with Lass—like symptoms enter diagnosis algorithm
  - Testing using RDT, if available
6. At end of study (or perhaps at the end of each year), members of cohort are bled again to determine sero-incidence
7. Cases are asked about health-seeking behaviour

# Q1) Notes

1. Public health information on how to reduce their risk of LF will be offered to these communities. Rodent control could/should also be offered

## Q2) Determine age-specific seroprevalence of LASV across region

### **Option1**

- Conduct community-based seroprevalence studies in other areas
  - Select High-medium-low incidence districts, as based on case-data

### **Option 2**

- Use existing serum banks, which could possibly include blood donors or antenatal screening samples (though this would be restricted by age and perhaps sex)

### **Option 3**

- Identify sentinel hospitals across the region, and introduce Lassa testing as part of diagnostic work up for febrile cases

Q3) Identification of risk groups

# Q4) Identification of risk factors and social and ecological drivers of incidence

## **Study 1: Case-control study**

- Possibly a case-negative design
- Assess individual, H-H and community characteristics associated with being a confirmed case
- Conducted over different settings using (as far as possible) comparable methods

## **Study 2: Analysis of existing data**

- Regression (including spatial regression analyses) to identify risk factors and how they may vary over time
- Requires analysis of a common standardised database (across all countries), and therefore common questionnaires (as far as possible) variables, etc.
- Option: collect data on prevalence of LASV in rodents, and rodent population during main cohort study (particularly if rodent control offered)



## 5) Documenting knowledge, behaviour and attitudes towards LF & LF vaccine in communities and HCW

- Study 1: health systems
  - Health systems research to be conducted to understand the extent to which referral patterns and local specimen transport systems/diagnostic processes can support whichever diagnostic/case definition threshold is chosen once the vaccine is developed
- Study 2: health seeking behaviour
  - Designed to understand how, when and why individuals seek /do not seek care
  - Mixture of quantitative and qualitative methods
- Study 3: Anthropological studies to explore local perceptions of LASV/vaccines to support community engagement strategies required for vaccine trials and subsequent roll out

# Core elements to be standardised across sites

## **Questions**

- Common standardised questionnaire to cover:
  - Basic demographics, H-H and environmental characteristics
- Common clinical variables and coding, to ensure that identical definitions of cases are used in each site

## **Data**

- Standardised electronic data capture methods (tablets)
- Common database