Lassa fever
A neglected disease in Africa
Who are the patients and what are their outcomes ?

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LASSA FEVER

- An acute and severe viral haemorrhagic illness
- Caused by the "Lassa virus"
- Infections /year - 300-500,000
- Deaths - 5000
- Seen in the Lassa fever belt (West Africa)

Reservoir & Transmission

(Mastomys Natalensis - Zoonotic disease)

Mother to child transmission

Rat to Man - exposure to rat *excreta, urine or blood*

Man to Man - Any body fluid *(stool, urine, vomit, saliva, sweat, mothers milk, blood, aerosol transmission)*

SIERRA LEONE
Gondama Referal Center

- 220 bed MSF referral hospital
- Pediatrics and emergency obstetric care
- 2011 : Increased number of Lassa cases in GRC

Operational challenges

Early diagnosis is difficult – Mimics malaria, and other severe diseases
(No rapid diagnostic test for lassa)

High case fatality – 50%

Nosocomial transmission within MSF health staff ⇨ 2 nurses died, (2011)

Blood transfusions – perhaps a source of transmission

MANAGEMENT OF SUSPECTED LASSA FEVER PATIENTS

- GRC :Identification and isolation of suspected cases

- Kenema hospital:Laboratory testing and treatment

Lassa Fever - a neglected disease !!

- No preventive vaccine (unlike yellow fever)
- No accessible diagnostics
- Expensive life saving treatment: Ribavirin treatment (5400 Euros/ 1patient!!)

- Limited research – *Class A select agent bioterrorism – American military*

STUDY OBJECTIVES

In the MSF hospital in Bo Sierra-leone

- **To describe the characteristics, management & outcomes of children and women with *suspected* or *confirmed* Lassa fever**

METHODS 1

Study Design: Retrospective audit of patients files

Period: August - December 2011

Site: Gondama referral hospital (GRC)

Study Population: Confirmed & suspected Lassa fever

Ethics MSF & Union

METHODS 2

WHO **Case definition for Lassa fever**

A patient with **fever > 38** degrees Celsius

- Unresponsive to anti-malarial and broad spectrum antibiotics within 72 hours
- And at least **two major or one major and two minor criteria**

METHODS 3

MAJOR CRITERIA

- Abnormal bleeding
- Swollen neck or face
- Conjunctivitis or sub-conjunctival haemorrhage
- Spontaneous abortion
- Unexplained tinnitus or altered hearing during a febrile illness
- Persistent low systolic blood pressure
- Known exposure to a confirmed Lassa patient or readmitted within three weeks of inpatient care for illness with fever
- Markedly elevated SGOT/AST

MINOR CRITERIA

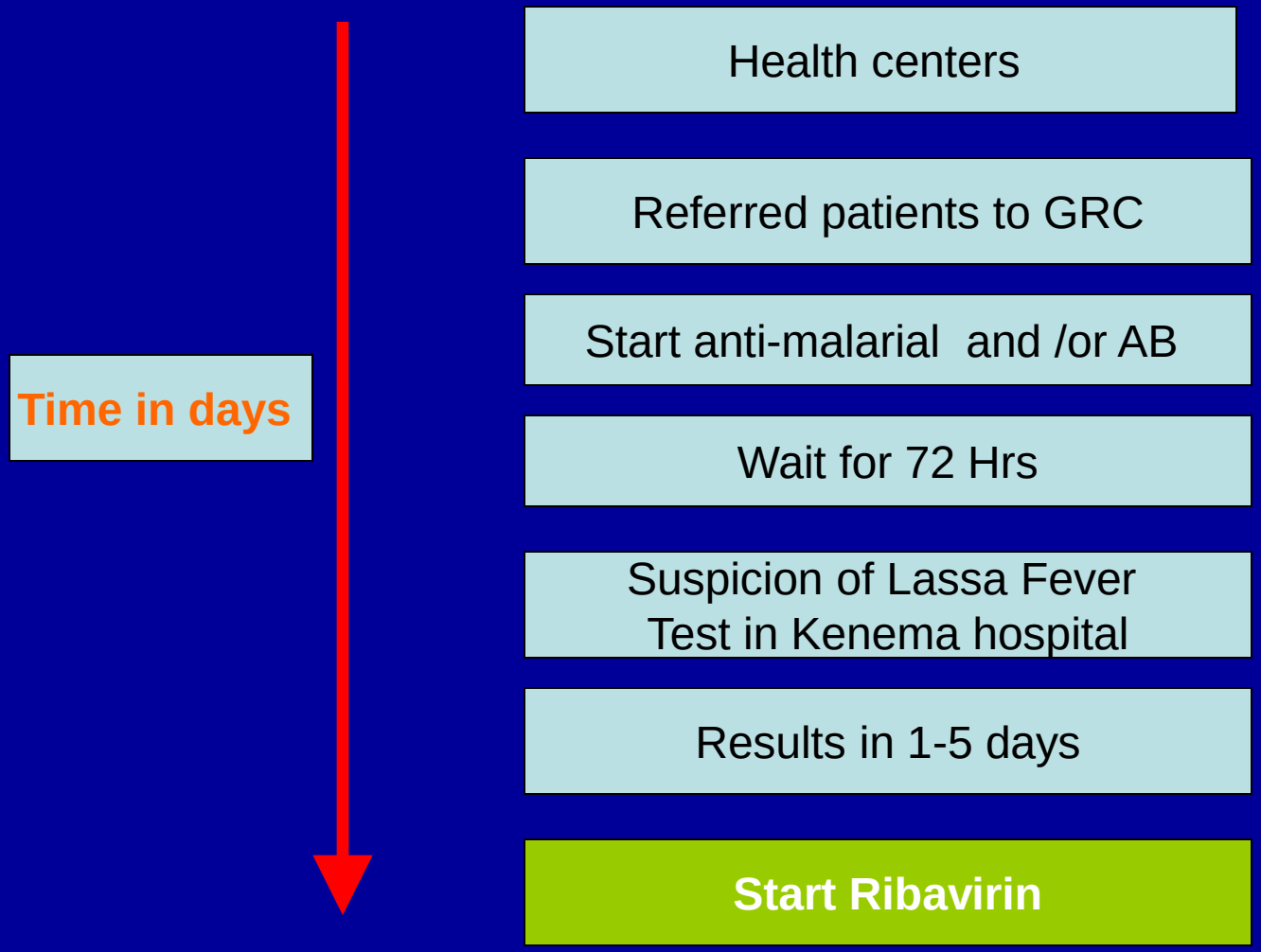
- Headache
- Sore throat
- Persistent vomiting
- Diffuse abdominal pain/tenderness
- Retro-sternal pain
- Diarrhoea
- Generalized myalgia and arthralgia
- Profuse weakness
- Proteinuria
- WBC count < 4000 μL

Lassa fever "suspect" : Patient fits the case definition but laboratory negative

Lassa fever confirmed: Patient with **Lassa fever laboratory test positive**

DELAY FOR RIBAVIRIN TREATMENT

(Ideal delay < 6 days)



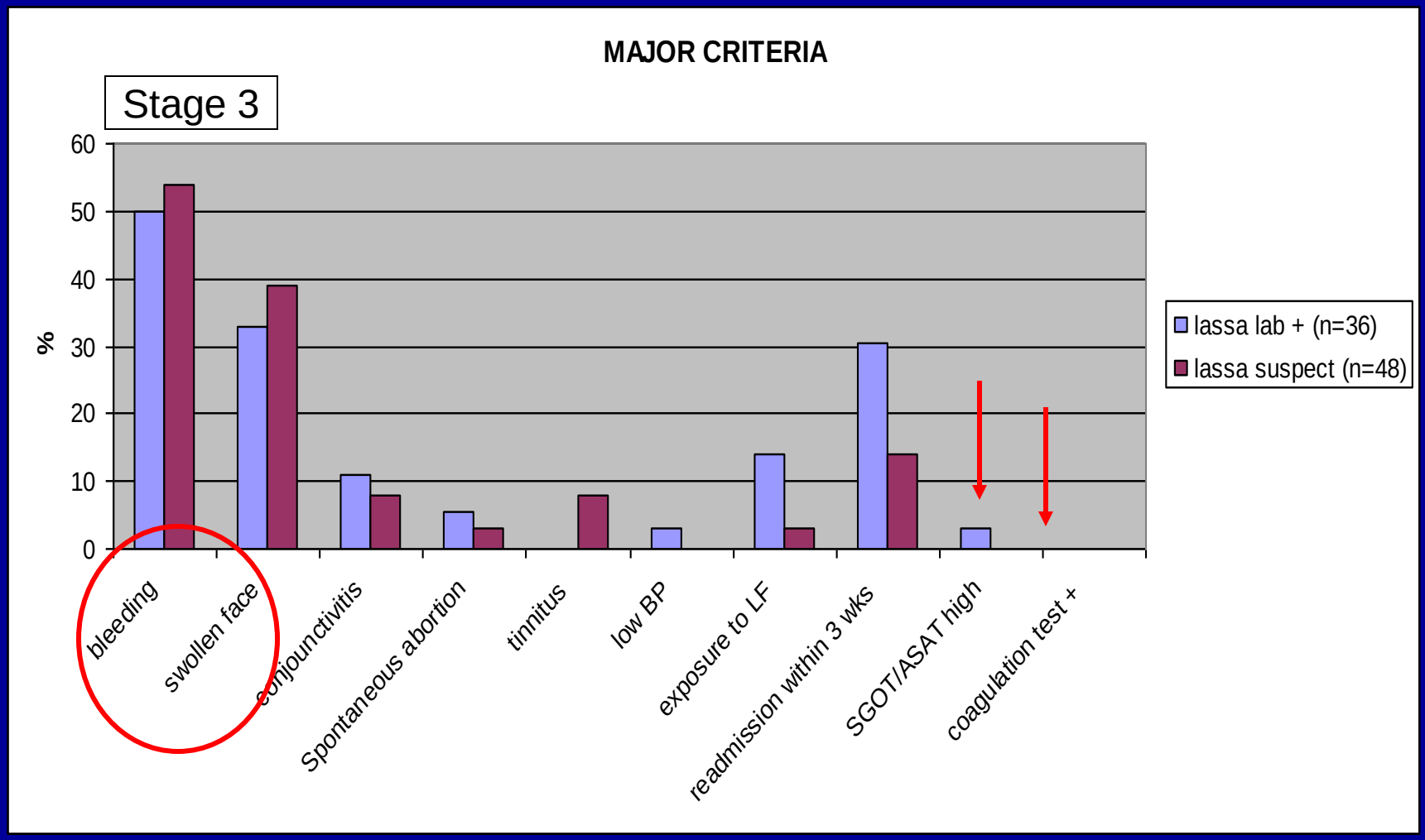
RESULTS 1
Characteristics of the study population

	Lassa confirmed N= 36 (43%)	Lassa suspect N= 48 (57%)	Total cases N=84
MALE	19 (53%)	27 (56%)	46 (55%)
FEMALE	17 (47%)	21(44%)	38 (45%)
AGE			
≤ 2 yrs	21 (58%)	29 (62%)	50 (60%)
> 2 – ≤ 5 yrs	4 (11%)	10 (21%)	14 (17%)
> 5 – ≤ 15 yrs	4 (11%)	4 (9%)	8 (10%)
> 15 yrs	7 (19%)	4 (9%)	11 (13%)

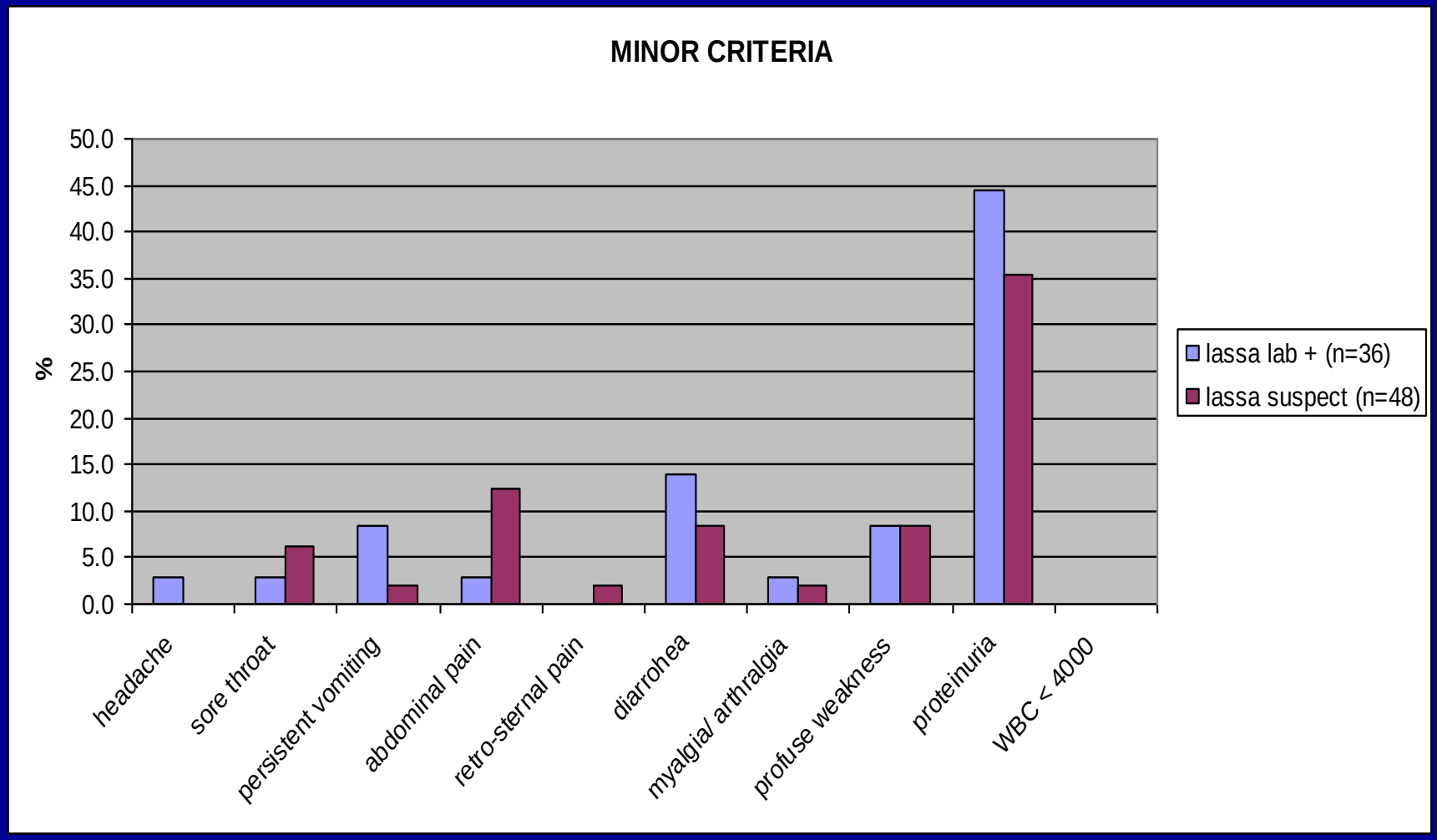
RESULTS 2
Case Fatality Rate

	Lassa Confirmed N=36	Lassa Suspect N=48	Total N = 84
Deaths	22 (61%)	21 (44%)	43 (51%)

RESULTS 4
MAJOR CRITERIA



RESULTS 5
PRESENTATION - MINOR CRITERIA

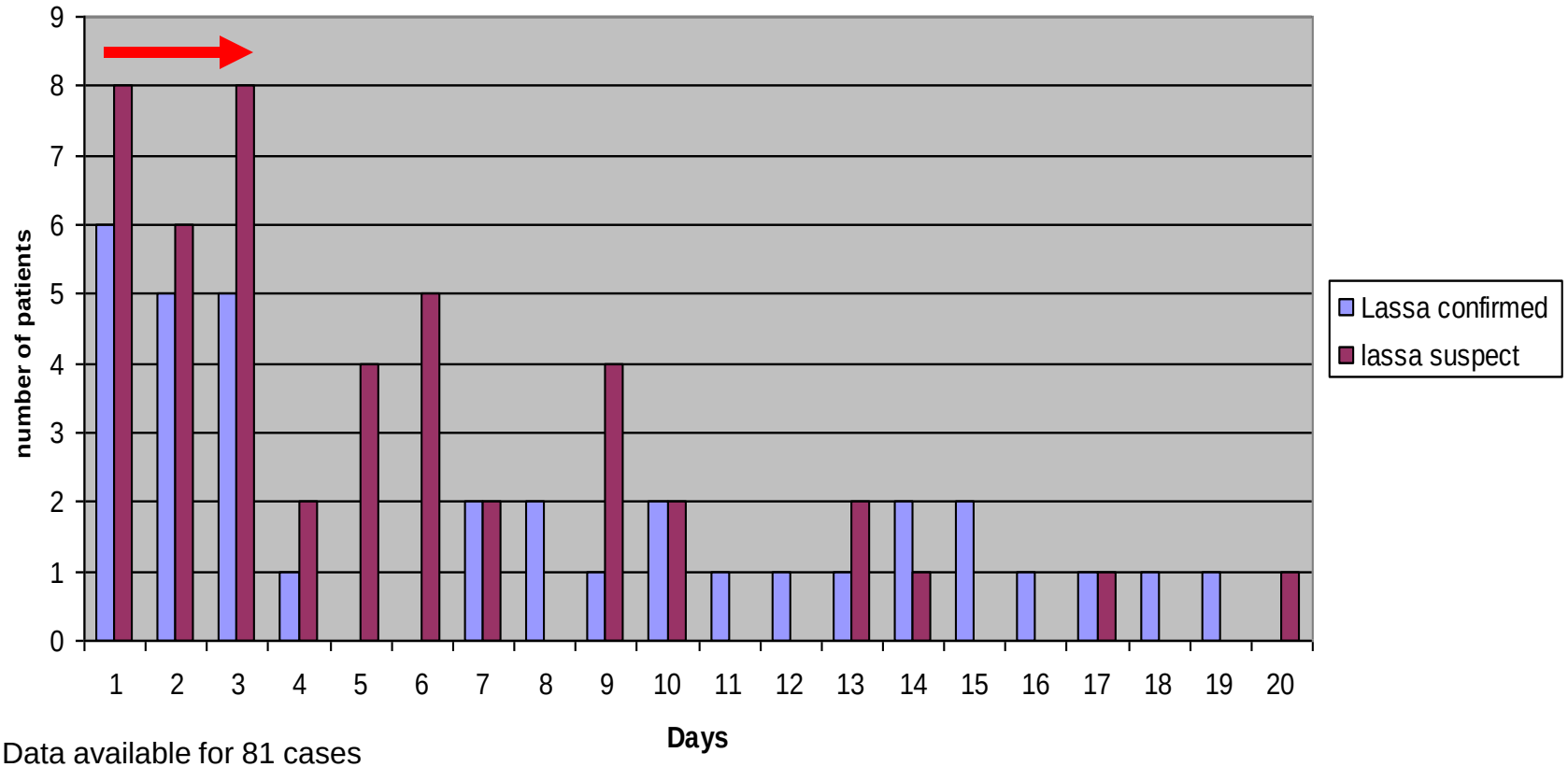


RESULTS 6
WHO CASE DEFINITION – HOW USEFUL?

	DID NOT MEET WHO CASE DEFINITION N=84
Lassa Confirmed	17/ 36 **(47%)**
Lassa Suspect	31/ 48 **(65%)**

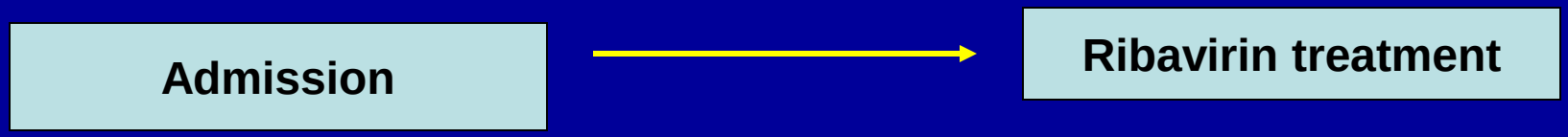
RESULTS 7
TIME DELAY
Admission to Lassa Testing

Desired time to testing ?



Data available for 81 cases

RESULTS 8
TIME DELAY
ADMISSION TO RIBAVIRIN



	Deaths	Alive
Mean (Days)	14	6

STUDY LIMITATIONS

- Preliminary data analysis
- Missing data in patient files
- No written reports from patients referred to Kenema referral hospital

CONCLUSIONS

- Very high case fatality rate
- Only 50 % of patients fit in the WHO case definition → late diagnosis
- Urgent need for improving Lassa diagnostic strategy
- *A neglected disease that should benefit from MSF advocacy*

Acknowledgements

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