Upsurge of Lassa fever cases in Nigeria, January to March 2018: What has changed?

Nothing to disclose
Outline

- Introduction
- Methods
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- Recommendations
Lassa Fever was first discovered in Borno State Northern Nigeria - 1969
— “Neglected” disease of public health importance
— 36 states and FCT have reported suspected case(s)
— Hot spot states: Ondo, Edo and Ebonyi
— High burden: Taraba, Bauchi and Plateau

All year round transmission
— Shift from dry seasonal transmission
— High transmission season
  December - March yearly
2018 Lassa fever outbreak

- 2018 Lassa fever outbreak unprecedented
  - Important question, whether the “outbreak” was due to:
    - a new virus variant
    - Increased high-season incidence
    - Improved case detection
    - Increased laboratory diagnostics
    - Improved coordination
    - Heightened awareness
    - or a combination of these factors

- This study explained the likely drivers of the upsurge of Lassa fever cases reported in Nigeria from January to March 2018
Methods

• Descriptive analysis of 2017 and 2018 national Lassa fever case-investigation-form database

  – Standard case definition
  – Case based surveillance system
  – Laboratory testing of all suspected cases
  – Socio demographic, risk factors, clinical, and treatment outcome variables
  – Coordination by LF National Technical Working Group
Methods…2

• Viral genome sequencing:
  – Conducted by Irrua Specialist teaching hospital and partners on positive Lassa fever samples to ascertain:
    – Changes in the viral genome
    – Transmission patterns i.e. “human to human” or “rodent to human”

• Key informant interviews:
  – National Lassa fever emergency operation centre Pillar leads
  – Lassa fever treatment Centres Health care workers
  – High burden states - Disease Surveillance Officers
  – Event based surveillance officers – Social media, media, prints
RESULTS
Trends & Epicurve of LF cases Nigeria

Age-group 21-40 (44%)  
Male to female 2:1
Distribution of LF cases in Nigeria - 2018

- **1613 Suspected cases**
- **394 Confirmed cases**
- **95 Deaths (CFR 24.1)**
- **19 States, 56 LGAs**
- **81% = Hotspot States**

**Legend**
- Zero case
- 1-20 Confirmed cases
- >20 Confirmed cases
- ≥1 Suspected cases
- 1 dot = 1 Confirmed case
Comparison of 2017 & 2018 Outbreak

• In the first 12 weeks of the years 2017 and 2018:
  – Increase laboratory confirmed cases 107 and 394
  – Decline in CFR 43.9% -2017 to 24.1% -2018
  – More HCWs affected
  – Early deployment of rapid response team

• In the same period, respectively 45.0% and 66.0 % of all confirmed cases were reported from contiguous Edo and Ondo states
  – 15% from Ebonyi state
• Phylogeny points to multiple zoonotic infections instead of extended human-to-human transmission

• Evidence from viral sequencing yielded no indication that the circulating viruses are different from those in previous years
Key informant interview…1

- Increase in number of LF testing laboratories from two to four
- Introduction of the new laboratory diagnostics
- Availability of free sample transport logistics framework
- Improved laboratory result turnaround time
- Designation of additional treatment centres – Supported by the Federal Government and partners
- Multisectoral coordination by LF TWG
Key informant interview…2

• Improved surveillance activities at the States:
  – Rapid response teams deployed to support affected states in the late 2017 outbreak
  – Lassa Intensive workshop by NCDC & ISTH

• Increased awareness:
  – Early January 2018 following the cluster of healthcare workers (HCWs) affectation with high mortality rates
  – High index of suspicion among HCWs
  – Media and political attention
  – Active case search and contact tracing

• Increased in awareness as evidenced by the event based surveillance
Conclusion

• Nigeria experienced the largest LF outbreak in 2018
  — Q1 confirmed cases exceeded 2017 cumulative cases
• The upsurge of LF cases was not due to new virus variant or change in transmission route

However, major driver of the high LF cases reported in Nigeria early in 2018
  — Enhanced coordination by NPI - NCDC
  — New and growing laboratories capacity
  — Improved surveillance system
  — Increased awareness
  — Overall intensified response
Recommendations

• Capacity building of surveillance officers and clinicians
• Intensified risk communication activities
• Establishment of additional diagnostic Laboratory
• Strengthen and designate more treatment Centres
• Institutionalize infection prevention and control
• Strengthening of animal surveillance/ rodent control
• Improve local capacity and scope for genetic sequencing
• Collaboration with more partners/stakeholders

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6181183/
Acknowledgement

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