Livestock Syndromic Surveillance System Evaluation - Turkana Kenya, 2018- 2023 May

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The livestock syndromic system is easy to use, able to **detect livestock diseases for informed responses, and attracts funding**. The system is **representative, and abortions were** the most recorded in goats.

BACKGROUND

- Turkana Syndromic Surveillance System for Livestock Diseases (S3LD)- community-level mobile phone-based syndromic disease and abattoir surveillance system
- S3LD system objectives: real-time early detection of livestock diseases for timely response, analysis, and monitor disease trends
- Over 60% of the Turkana County population are pastoralists, which makes them vulnerable to zoonosis, and they are using the S3LD system, which has not been evaluated
- The objective of the evaluation was to assess the system's performance and characterize abortions in the system

METHODS

Study area Turkana County is arid and Semi-Arid land

- Challenges of vastness with poor infrastructure
- Vulnerable to huge socio-economic losses due to livestock mortalities from zoonotic diseases

Evaluation approach- Updated US CDC guideline was used to do the evaluation.

- Twenty-eight Surveillance system stakeholders were interviewed using pretested questionnaires as part of the assessment of the surveillance system attributes.
- Data on abortions from the system from 2018 through 2023 were abstracted, cleaned and analyzed using frequencies and proportions

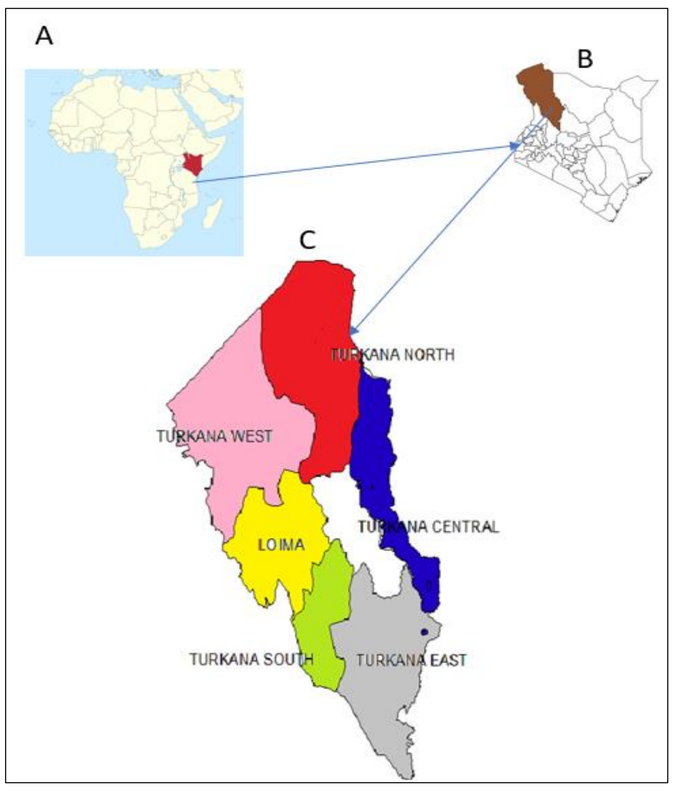

Figure 1: A sample Map of Turkana County in Kenya showing sub counties reporting through Syndromic surveillance system in Turkana A; Africa, B; Kenya, C: Turkana (Map Generated by Authors using Q GIS)

RESULTS

Performance of system attributes

- About 87%(26/30) of the wards reported in the seven sub-counties, Completeness was at 78%(4121/5283) and consistency at 91%(4121/5283)
- Timeliness, the average reporting time was two days, with 68%(19/28) getting feedback within a month and 75%(21/28) using ≤ 5 minutes to fill system tools

Abortions reported in the system.

- Abortions, 4% (204/5283) of data were recorded, of which 46% and 24% were from Loima and Turkana North sub-counties, respectively.
- Goats had 73% of abortions, followed by cattle at 15%

RESULTS CONTINUED

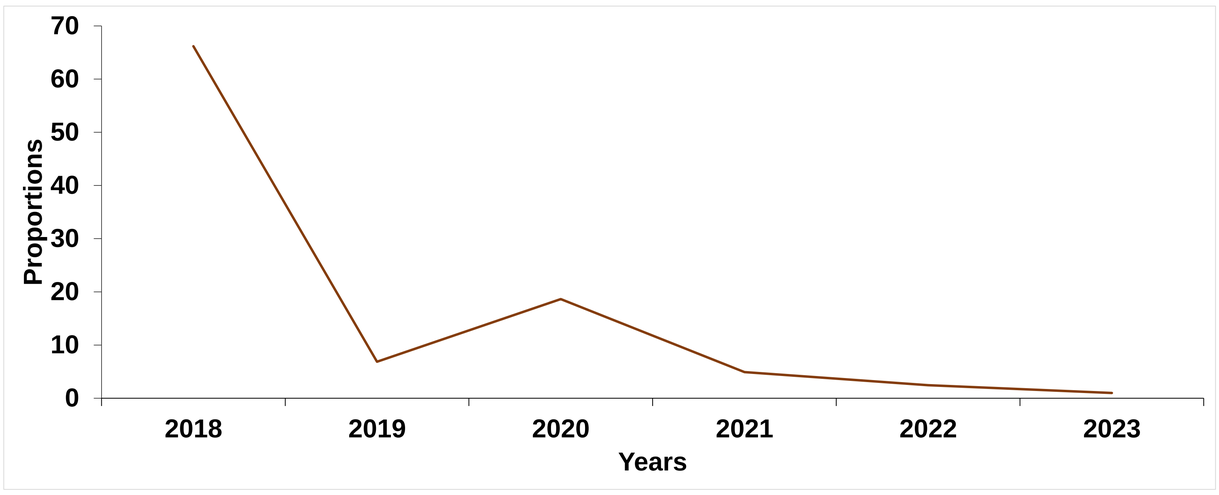

Figure 2: A trend of reported abortion syndrome from 2018 to May 2023 through 3SLD-Turkana

The usefulness of the system

Table 1. The usefulness of the S3LD Surveillance system n=28

Variable	Proportion of users	Example
Attracts Funding	54%	Government Budget 2021, 0.2-2 Ksh. Million
Informs responses	93%	53 vaccinations & treatment, 2021
Detects livestock diseases	100%	11 outbreaks detected

CONCLUSIONS

- The system detects syndromes for response
  - Aids in early detection of outbreaks and response
- It is simple, flexible, and representative as all sub-counties are reporting through it and has timely reporting of health occurrences
  - Generation and easy flow of information in the system for decision-making
- Majority of abortions were reported in goats
  - High economic losses and spread of zoonotic diseases

ADDITIONAL KEY INFORMATION

Additional Resources

1. Turkana Syndromic e-surveillance: averting livestock disease outbreaks, improving livelihoods, Syndromic e-surveillance: averting livestock disease outbreaks, improving livelihoods (ilri.org)

2. CDC. Field Guidelines. Overview of Evaluating Surveillance Systems. 2013:18. doi:10.1523/JNEUROSCI.0974-04.2004

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