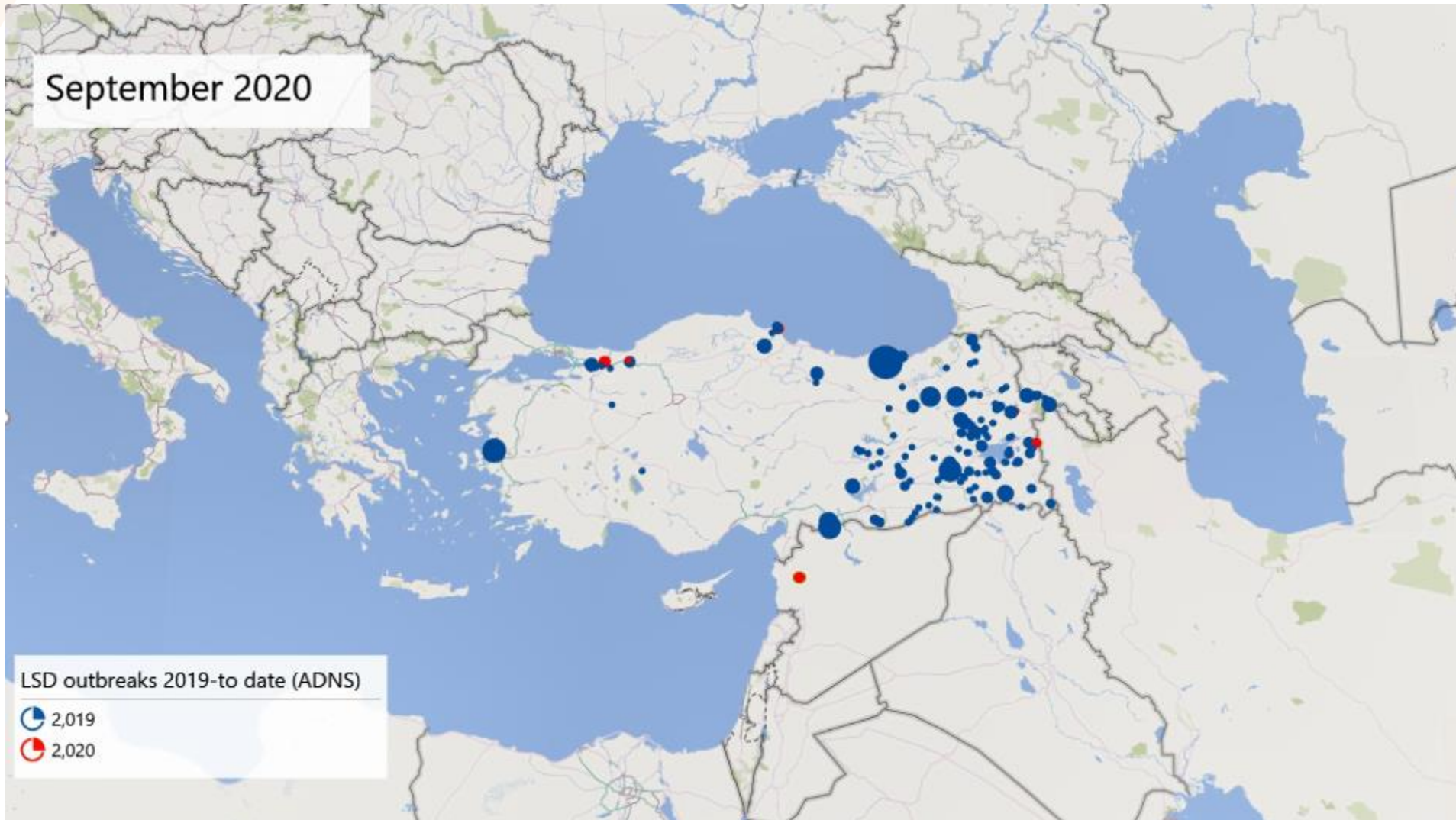# Elements for planning surveillance in the strategy for cessation of LSD vaccination

**Alessandro BROGLIA**

**EFSA**

Standing Group of Experts on Lumpy Skin Disease in South-East Europe under the GF-TADs umbrella

**efsa**
European Food Safety Authority

September 2020

LSD outbreaks 2019-to date (ADNS)
- 2,019
- 2,020

- 180 outbreaks in 2019
- 5 outbreaks in 2020 up to March 2020

What surveillance system for different scenarios?

## Epidemiological situation:

- Infection and vaccination status

## Objectives:

- Early detection of LSD
- Demonstrate disease absence

1. No infection, no vaccination

2. No infection, vaccination is continued

3. No infection, vaccination is stopped

4. Past infection, vaccination is stopped

# Elements assessed for surveillance

- objective of the surveillance: early detection or proving absence

- type of surveillance active/passive

- possible source of infection: risk areas?

- susceptible target population: which animals to sample

- risk period > April-October

- diagnostic tests available: clinical detection, PCR , ELISA

- design prevalence : threshold of detection

- how many animals/herds to be checked : sample size

- how often to check/test : sampling frequency

Key issue: estimate design prevalence for early

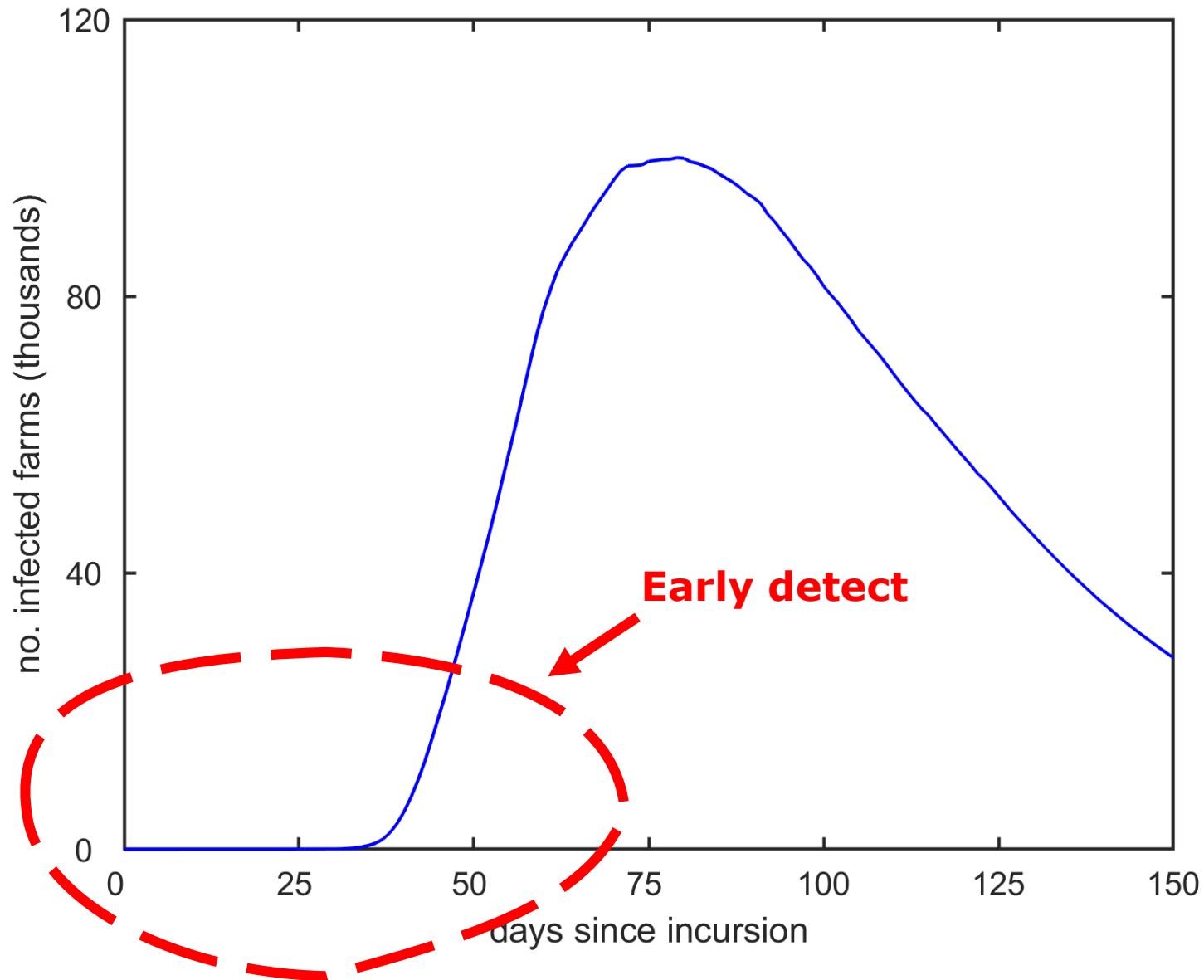detection and sampling frequency

Or

How to detect LSD in the **quickest way** in order

to **minimise losses**

# Example

- Test : clinical detection >> Se 75% (confirmation by PCR)

- Sample area: area at risk of introduction

- Target population: susceptible cattle population in the at-risk area

- Active surveillance on areas at risk + passive surveillance on the whole country.

- Design prevalence, sampling frequency and size >>…

synoptic table on surveillance at:
https://doi.org/10.5281/zenodo.1451440

# Sample size for early detection

| Delay in detection (sampling frequency) | Design prevalence | Sample size |
|---|---|---|
| | | **In 50 km surveillance zone (95% confidence)** |
| 35 days | 0.075% | 427 |
| 47 days | 1% | 31 |
| 56 days | 5% | 5 |

**Serology**

- Design prevalence>> % ever infected herds (e.g. 3.5%)

- Test : ELISA >> Se: 83%

- Sampling period: after major risk period (April-Octber)

- Sample area: whole country

- Target population: Non-immunised fraction of cattle population

- Sample frequency: once/twice a year

- Sample size: 103 herds to be tested in the country

# New EFSA output on LSD

Assessment of the control measures of the category A diseases of Animal Health Law

effectiveness of:

- the **clinical and laboratory examination** to detect disease;

- the duration of the **monitoring period** for different scenarios;

- the size and duration of the **restriction zones**

>> Online mid February

# Key recommendations

- <u>Passive surveillance</u>: key for <u>early warning</u> for LSD, always in place

- areas bordering endemic regions previously infected >> <u>active surveillance</u> (clinical and serological)

- <u>Feasibility</u> of surveillance plan : to be adapted to different contexts and resources

- Don't rely on only one test or component: combine!

# Thank you for your attention!

EFSA page on LSD:

https://www.efsa.europa.eu/en/topics/topic/lumpy-skin-disease

Video on vaccination effectiveness:

https://www.youtube.com/watch?v=RoUCCGLeAtk&t=41s

**Follow us on Twitter**
@efsa_eu

**Subscribe to**
www.efsa.europa.eu/en/news/newsletters
www.efsa.europa.eu/en/rss