DTU Vet
National Veterinary Institute

Do we have enough resources for clinical surveillance in case of a foot-and-mouth disease epidemic in Denmark?

Tariq Halasa* and Anette Boklund

Objective:

Determine whether there are sufficient resources for clinical surveillance, in case of a foot-and-mouth disease (**FMD**) epidemic in Denmark.

Procedures:

1- Model, data and disease spread

The Davis Animal Disease Simulation model was adapted to DTU-DADS to simulate the spread of FMD in Denmark. Farm level and animal movements data were used. A herd may obtain infection throughout animal movements, medium and low risk contacts, markets, or local area spread.

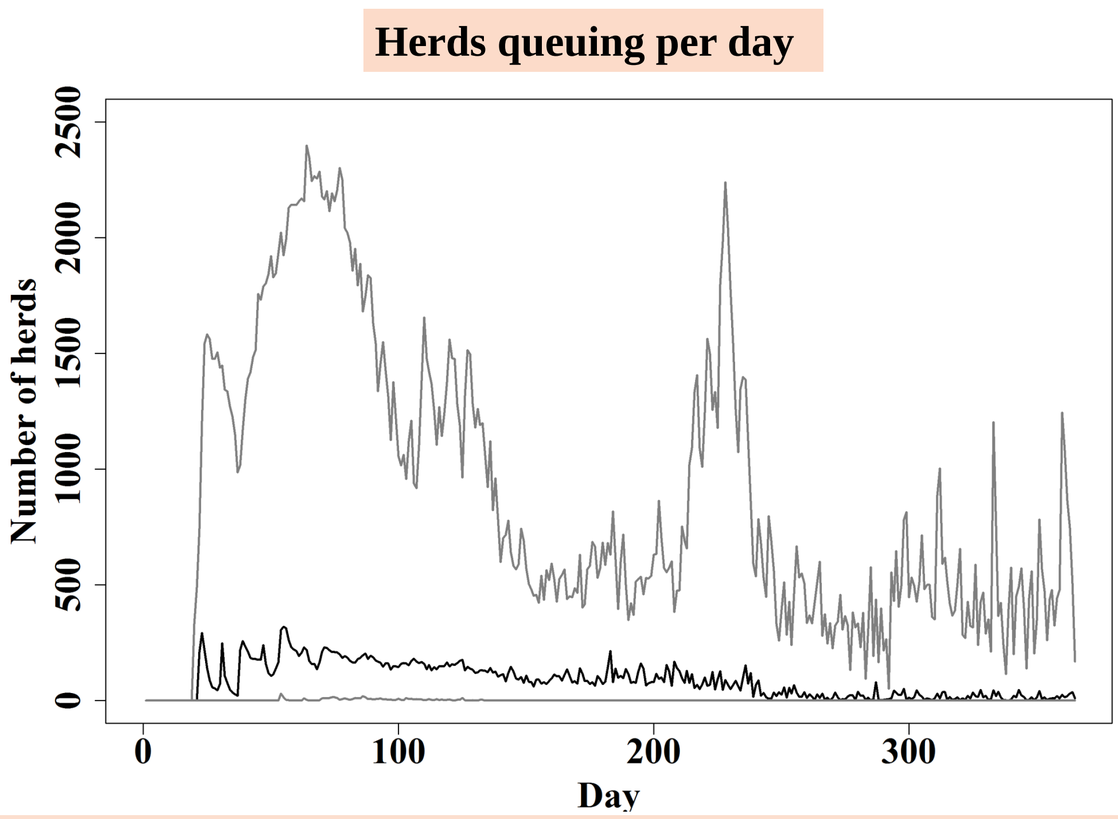
2- Surveillance capacity and scenarios

An expert group estimated that in case of an FMD epidemic in Denmark, the daily clinical surveillance capacity will be **450** herds per day. The model was run with this number representing a default situation and with 3 alternative scenarios, with surveillance capacity of 200, 350, or 600 herds per day.

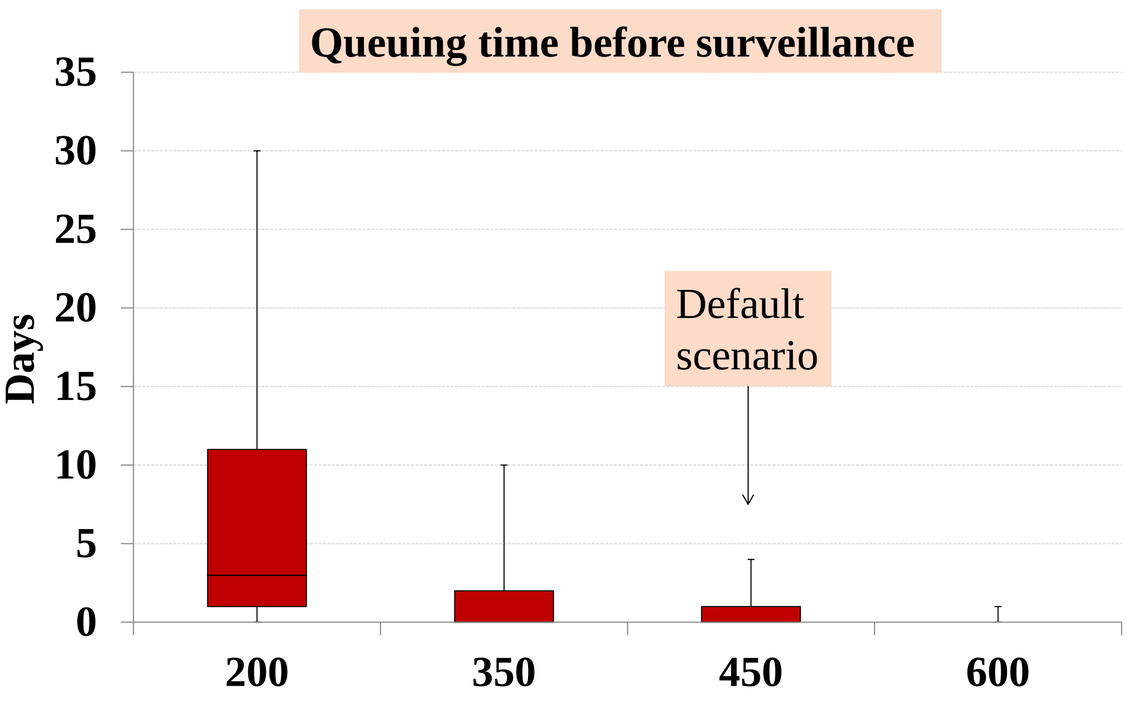
Results:

Consequences of an FMD outbreak in Denmark using different scenarios for surveillance capacity. Median (5th and 95th %).

Surveillance capacity (herds/day)	Epidemic duration (days)	Number of infected herds	Diagnosed herd from surveillance	Total losses (million €)
200	42 (8-116)	39 (4-205)	5 (0-19)	410 (304-817)
350	41 (16-99)	39 (4-191)	5 (0-24)	409 (303-684)
450	**42 (8-117)**	**39 (4-188)**	**5 (0-26)**	**409 (303-673)**
600	41 (4-184)	39 (4-184)	5 (0-26)	410 (303-670)



Median (Black), 5th and 95th percentiles (gray) number of herds queuing for surveillance, in the default scenario, where surveillance capacity was 450 herds per day.



Queuing time (in days) before a herd is surveyed, when surveillance capacity was 200, 350, 450 or 600 herds per day.

Conclusions:

- **There are sufficient resources to survey herds on time.**
- **Fewer resources might result in larger and costlier epidemics in the extreme situations.**

* tahbh@vet.dtu.dk

National Veterinary Institute, Technical University of Denmark (DTU), Denmark.