Quantitative Risk Analysis as a Tool to Improve Biosecurity on Cattle Farms

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Objective

To quantify the probability of pathogen introduction to cattle farms through animal movements and the impact of biosecurity measures on prevention.

Methods

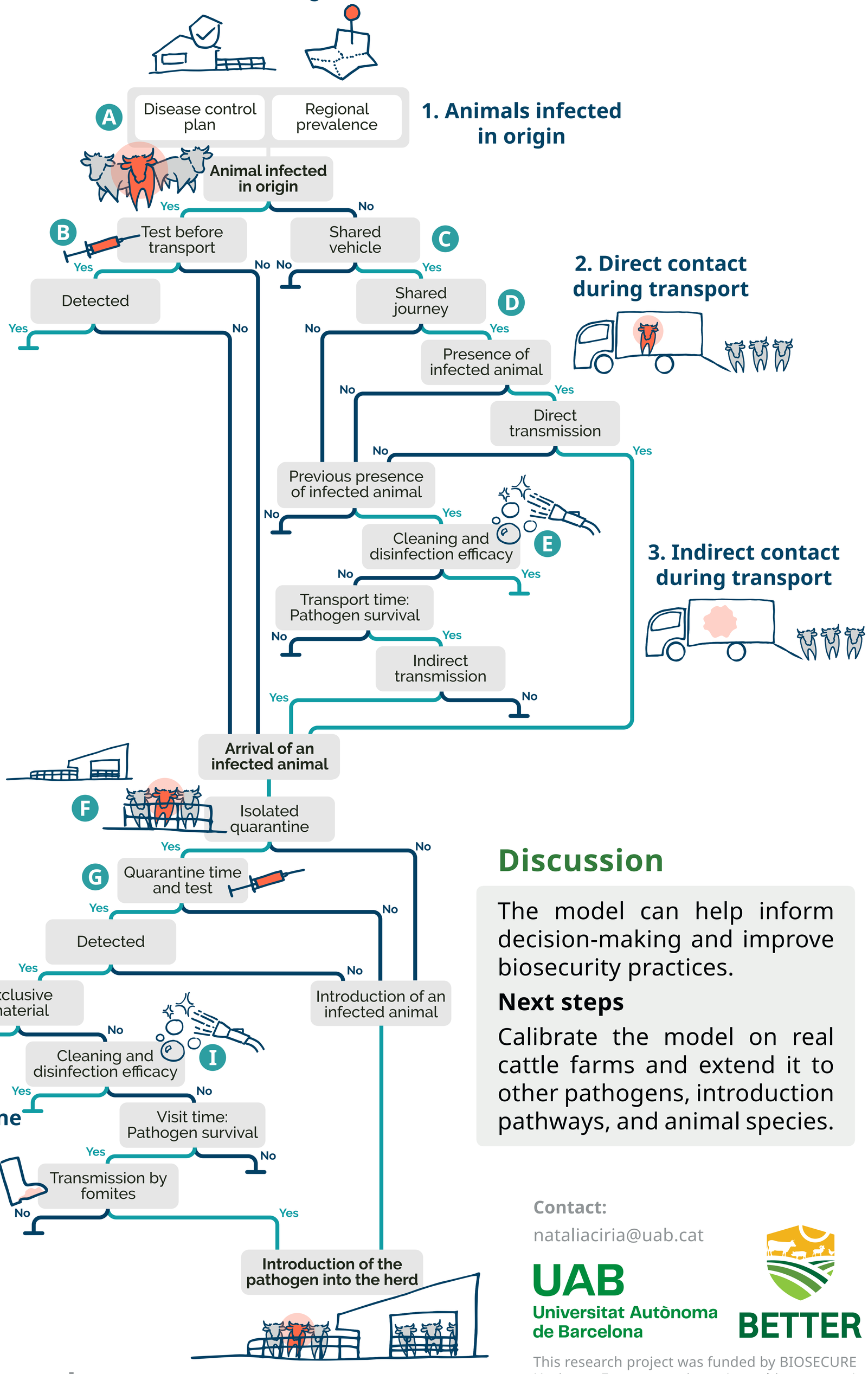
Quantitative stochastic risk assessment model using data from farm surveys, available databases and literature.

Pathway: Purchase of cattle

Pathogens can be introduced by **[1-4]**

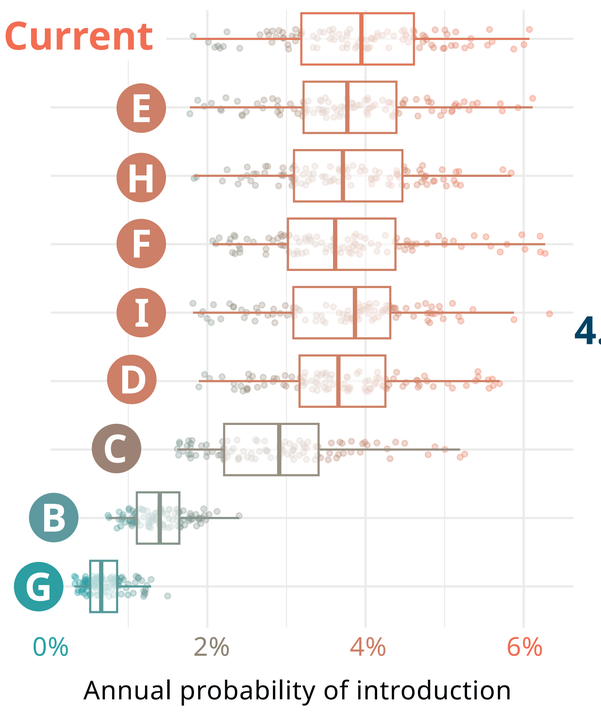
Biosecurity measures assessed

- **A** Purchase animals from herds with a disease control plan
- **B** Test animals before transport
- **C** Use your own vehicle and do not share it
- **D** Do not transport your animals with animals from other farms
- **E** Clean and disinfect the vehicle
- **F** Quarantine new animals
- **G** Test animals during quarantine
- **H** Use exclusive quarantine material
- **I** Clean and disinfect quarantine material



Results

Annual probability of IBR introduction if specific biosecurity measures are implemented in a farm:



Discussion

The model can help inform decision-making and improve biosecurity practices.

Next steps

Calibrate the model on real cattle farms and extend it to other pathogens, introduction pathways, and animal species.

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