

# MRSA: moving forward on the basis of evidence

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# Plan

- What do we know?
  - Emergence and spread
  - Convergence and divergence
  - Food borne risk
  - Hygiene measures
- What do we need to know?
- What do we need to do?
- What do we say?



# MRSA timeline

1961  
Emergence of  
MRSA in humans  
UK  
HA-MRSA

1990s  
CA-MRSA  
United States

2005  
First reports  
In farm animals  
Netherlands  
NT-MRSA

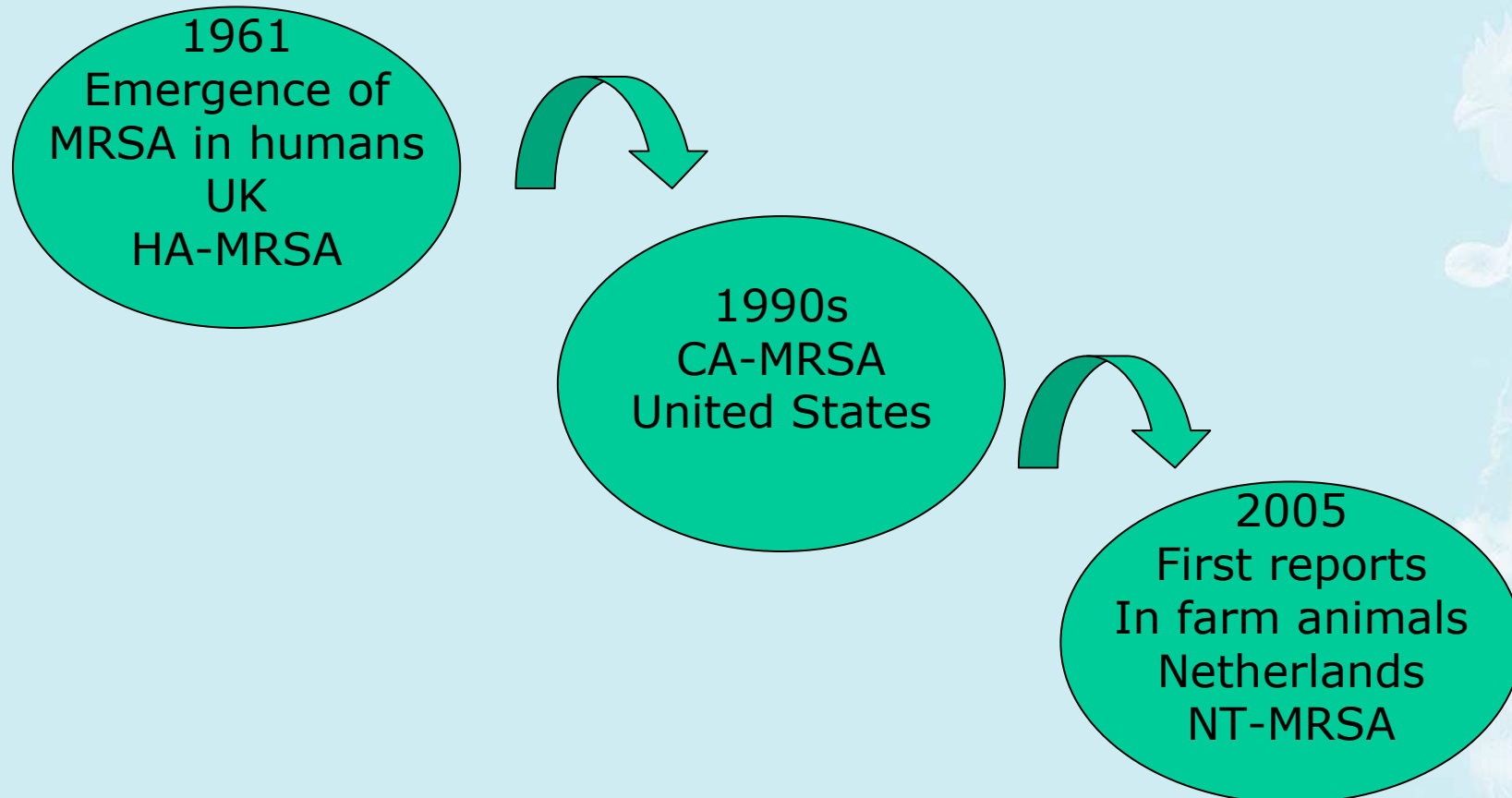


## Methicillin-resistant *Staphylococcus aureus*

- MRSA has been known for a long time as a major human health problem.
- Originally, MRSA infections were almost exclusively found in hospitals (H-MRSA). Nowadays MRSA infections are increasingly emerging in community settings.
- Only recently a new strain of MRSA has been found in food animals (St 398 or NT).
- So far a connection between the newly emerging strain of MRSA in animals and traditional human MRSA has not been established.



# Cascade effect?



# Convergence and divergence among HA, CA and NT-MRSA

- Divergence
  - Pathogenicity, Antibiotic resistance phenotype
  - Exposed sub-populations
- Convergence
  - Companion animals and humans
  - Transmission through skin contact or fomites
    - But not fully understood in relation to NT 398



# No Food borne risk

- CDC
  - ..thus far there is no documented role for meat consumption or handling in MRSA transmission \*»
- VWA
  - ...is het onwaarschijnlijk dat het voorkomen van NT-MRSA op levensmiddelen van dierlijke oorsprong een relevante factor is bij de verspreiding van MRSA binnen de humane populatie.\*\*

\* CDC response to question of Jim Collins, House of representatives, 4 Feb 2008

\*\* Voedsel en Waren Autoriteit, January 2008 it is unlikely that the presence of NT MRSA on food of animal origin be a relevant factor in the spread of MRSA within the human population

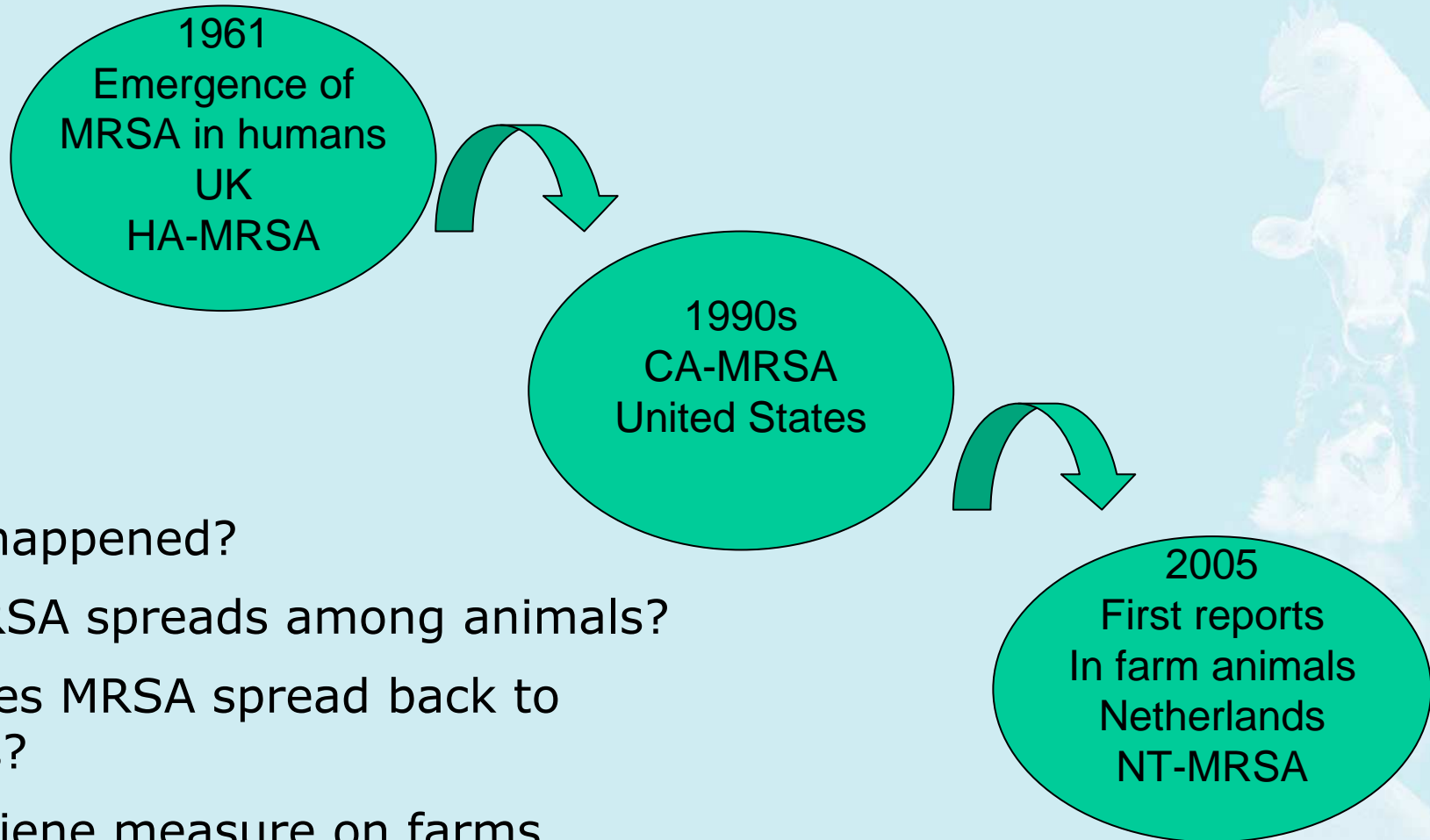
# Hygiene measures

- Hygiene measures have an impact in health-care settings and communities
- Ditto in veterinary hospitals
- Do they work on farms ?
  - Hygiene measure on farms have been challenged
  - They should not be dismissed too quickly





# What do we need to know?



How it happened?

How MRSA spreads among animals?

How does MRSA spread back to humans?

Are hygiene measure on farms useful?

# What do we need to know?

- EFSA\*
  - Frequency of MRSA in food animals
  - Occurrence of NT-MRSA in humans
  - Risk factors for spread
    - Selective pressure, movement of animals, husbandry practices
  - Origin of the problem
  - Impact on human health
  
- Khanna\*\*
  - Longitudinal studies of MRSA acquisition by pigs

\* Report of the Task Force on Zoonoses Data Collection. The EFSA Journal, 2007, 129, 1-14

\*\*Methicillin resistant *Staphylococcus aureus* colonization in pig and pig farmers, Veterinary Microbiology 128, 2008, 298-303



# What do we need to do ?

- IFAH-Europe remains committed to responsible use on farm
  - EPRUMA tool
  - Do we do enough to educate farmers and veterinarians on the necessity of responsible use ?
- Hygiene measures on farm
- Continued monitoring of NT-MRSA



# What do we say ?

- NT-MRSA is different from HA-MRSA and CA MRSA
- Food is not a risk
- Up to now, the role of NT-MRSA in human disease is not known



# Conclusion

- IFAH-Europe supports the scientific research undertaken by EFSA and the national authorities and will welcome any discussion on its possible contribution
- IFAH-Europe is committed to the responsible use of antimicrobials

