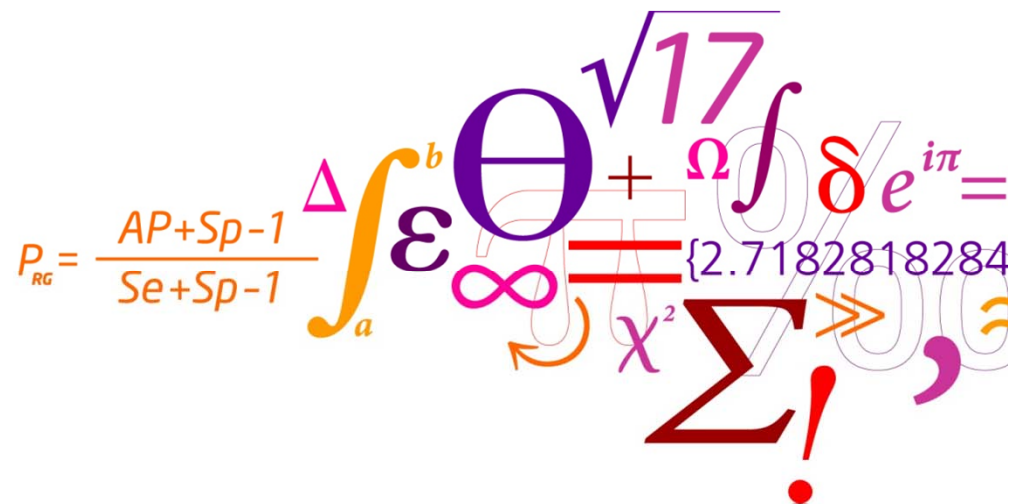


EPIZONE: Highlights from five years of international collaboration on surveillance and epidemiology

Claes Enøe

Leader Theme 6: Surveillance and Epidemiology



Outline

- Some highlights from 5 years of scientific work within Epizone
- Some highlights from 5 years of networking in the Epizone Universe
- Some examples of major outcomes
- My personal and positive experiences

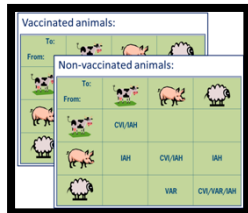
The work packages



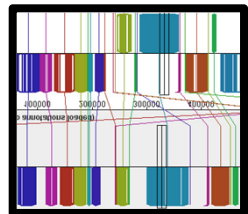
- 6.1 Surveillance and epidemiology of emerging viral diseases in aquaculture



- 6.2 Molecular epidemiology and surveillance of avian influenza (AI) and avian paramyxovirus (APMV)



- 6.3 Experimental epidemiology

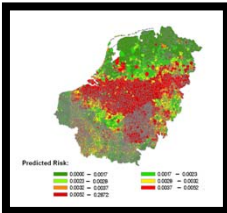


- 6.4 Molecular epidemiology

The internal calls



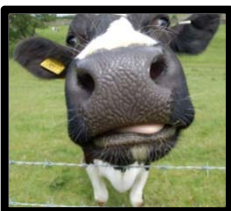
- 6.5 Harmonisation of Wildlife Surveillance for Epizootic Animal Diseases (WILDSURV)



- 6.6 Epidemiology and surveillance of bluetongue virus serotype 8 in Europe



- 6.7 Establishing the transmission dynamics of bluetongue serotype 8 and entomological aspects in Northern Europe (BT-DYN-VECT)



- 6.8 Comparative dynamics of BVDV-1 and the newly detected bovine pestivirus (BVDV-3)

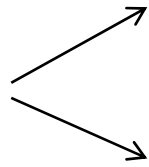
First impression – bag of mixed candies



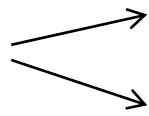
Epidemiology and molecular epidemiology



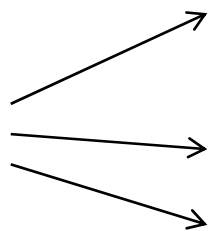
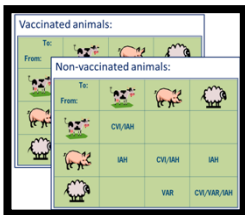
Some scientific highlights



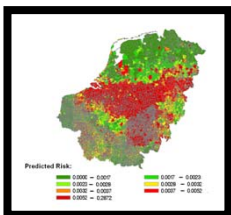
- High number of viral haemorrhagic septicemia virus (VHSV) and infectious hematopoietic necrosis virus (IHNV) isolates sequenced and used as tool for molecular tracing of disease outbreaks
- For the first time serological methods in aquaculture validated and standardised



- 550 AI and 116 APMV sequences submitted to public databases such as GISAID
- Novel genotypes of APMV isolates from Africa

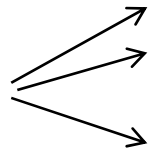


- Foot-and-mouth disease virus (FMDV) use of 4 data sources to estimate transmission parameters both within- and between species and non- and vaccinated populations
- Swine vesicular disease virus (SVDV) - estimation of transmission parameters from experiments
- SVDV - spatial analysis of SVDV outbreaks in Lombardia



- Shared database with data from 5 member states
- Spatiotemporal model for BT riskfactors and riskmaps

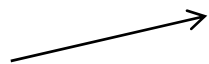
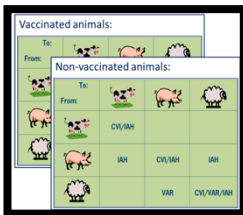
Some networking highlights



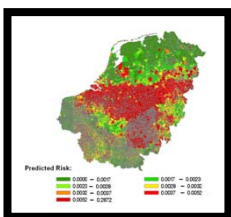
- Strengthen collaboration among fish people
- Opening the view, networking and collaboration with the "Terrestrials"
- Geographical information system (GIS) and worldwide questionnaire used to map diseases and gain knowledge



- Sharing of protocols for AI and APMV genome sequencing



- FMDV - course 'Design and analysis of transmission experiments' Nov 2009. 25 participants attended the course, 23 of whom were from EPIZONE institutes

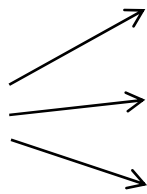


- Contributions from 10 member states

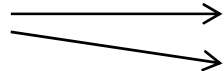
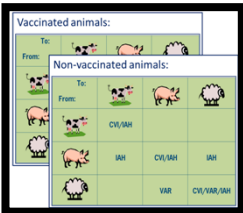
Some major outcomes from WPs



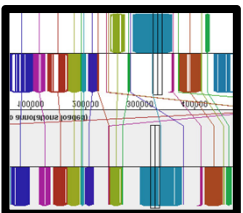
- Fish pathogens database www.fishpathogens.eu
- Koi herpes virus (KHV) situation assessed World wide - standardised diagnostic methods established



- 11 peer-reviewed publications and 23 meeting communications on AI
- 6 peer-reviewed publications and 3 meeting communications on APMV
- Review article with recommendations for EU AI and NDV surveillance



- Major input to simulation modelling
- 5 papers published, 5 in preparation. ## oral and poster presentations

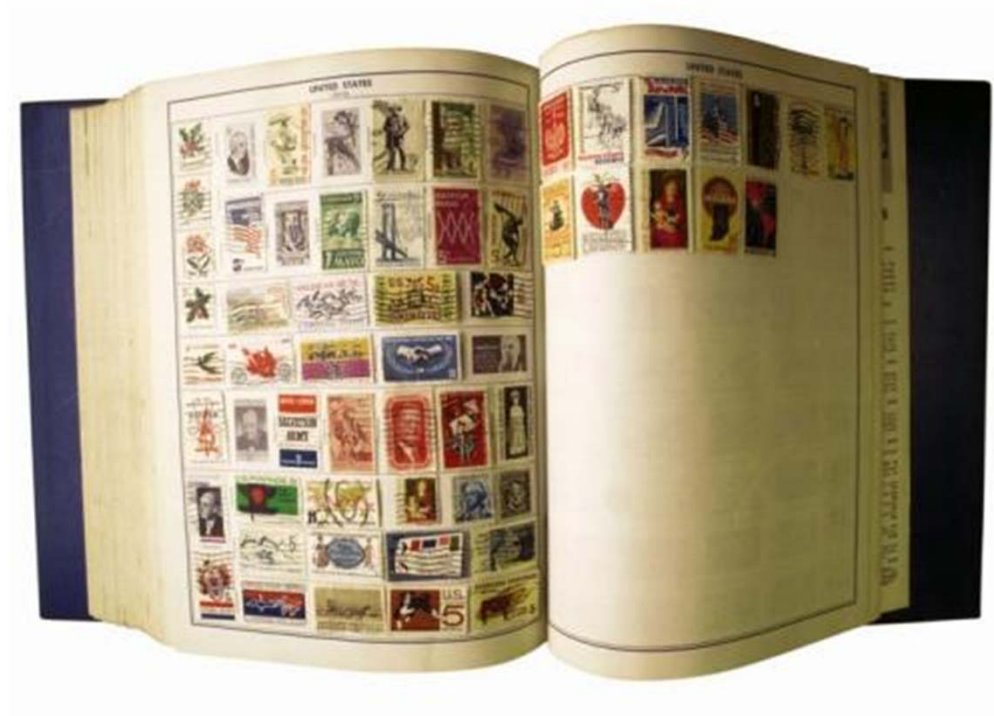


- A generic database for harbouring and sharing of Epizone data developed in cooperation with Hannover Veterinary School

Epizone data – a nice stamp collection



Collected and put into order



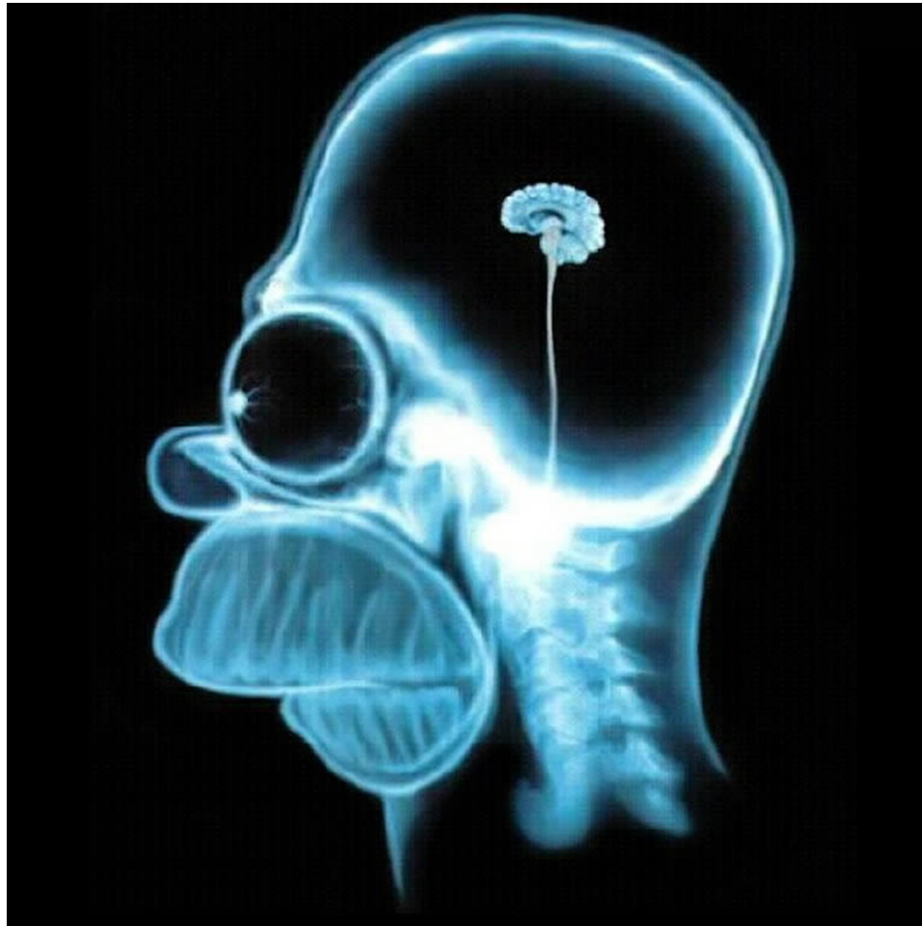
And entered into databases



So what can we do with these data?



By 'we' I mean epidemiologists



Excellent question and a future challenge

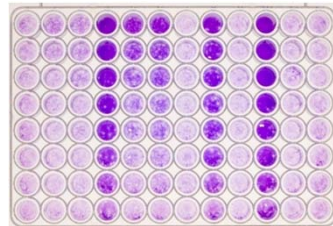
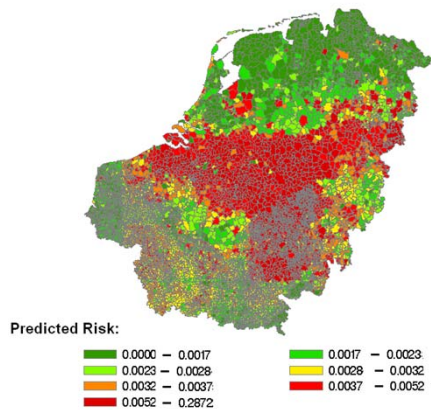


Some personal and positive experiences

- Provided an excellent platform for networking which is very important for data dependent research as epidemiology
- Emphasised the need to share data across member states and even further
- Gave me insight into molecular epidemiology and the need to do something about the continuously increasing amount of biological data



Essence



Vaccinated animals:		Non-vaccinated animals:		
To:				
From:				
		CVI/IAH		
		IAH	CVI/IAH	IAH
			VAR	CVI/VAR/IAH

“WE HAVE SHOWED HOW IMPORTANT IT IS TO COLLECT DATA IN A STANDARDISED WAY AND GENERATE BASIC BIOLOGICAL DATA, AND WE HAVE REALISED THE POWER OF SHARING DATA AND INFORMATION ACROSS MEMBER STATES.”

CLAES ENØE, THEME LEADER

08 EPIZONE: FOR BETTER CONTROL OF ANIMAL DISEASES