



## Challenging ECVPH specialists – an industry perspective

Lis Alban  
DVM, Ph.D. Dipl ECVPH, Dipl. ECPHM  
Danish Agricultural & Food Council



## Introduction

- European livestock & meat-industry faced with challenges within Veterinary Public Health
  - H1N1 virus and pigs
  - Concerns for antimicrobial resistance
  - Demand for organic and fresh meat for consumption
  - Control of possible outbreaks of exotic animal diseases like classical swine fever



## Introduction - 2

- Cost-effective solutions needed among others within veterinary public health
- Specialist are available
  - However, often solutions are not found in time
  - Why?
- How can timely solutions be found?



## Outline of presentation

- Case stories presented that could have been dealt with more adequately
  - Seen from industry perspective
- Based on this
  - Lessons learnt by the industry
  - How VPH experts can help





## Case story 1 – H1N1

- In some parts of the world called swine flue
  - Name resulted in non scientific, negative reactions against pigs and pork
- Canadian pig farm in positive to H1N1
  - Herd quarantined and animals within herd tested
  - Herd released from quarantine when animals tested negative
  - However packers would not accept the pigs for slaughter, and herd was eventually depopulated

## Case story 1 – H1N1



- Primarily a public health issue
  - Human-to-human transmission main spreading mechanism
  - Virus cannot be transmitted through meat
- WHO way of defining levels of epidemic might have contributed further to these reactions
  - WHO primarily based the scale on virus' capacity to spread
- While management apparently was in place, risk assessment was misleading and risk communication failed
  - Severity of disease should be included the into pandemic scale
  - Naming of an infection should be made carefully to avoid serious side-effects that have no effect on human health

## Case story 2 – AM resistance

- Possible severe impact on human health related to infection with *Salmonella* Typhimurium DT104
- Surveillance-and-control programme in Denmark in 1996
  - Findings of DT104 on a Danish pig farm lead to culling of herd
  - Findings in meat resulted in requirement for heat-treatment
- After 3 years strategy re-evaluated
  - Possible to eradicate DT104 from infected farms
  - But impossible to stop spreading to other farms
- Did DT104 become a problem as forecasted?
  - In Denmark, DT104 has stabilised itself in pig farms
    - Constitutes 5-8% of *Salmonella* Typhimurium isolates

## Case story 2 – AM resistance

- Most common type of DT104 – penta resistant DT104- did not cause more serious disease in humans than sensitive type of *Salmonella* Typhimurium
- Hence, massive amount of money spent on small proportion of *Salmonella* burden
- Resources could have been spent more effectively
  - e.g. by using hot-water decontamination of carcasses from high-risk herds at slaughter
- Far more difficult to remove surveillance and control programme than to initiate it
- In 2009, however, Danish DT104 programme will finally be terminated

### Case story 3 – outdoor prod.

- Risk profile of outdoor produced poultry different from indoor produced poultry
  - *Campylobacter* prevalence dramatically higher
- Not fully appreciated by consumers who tend to perceive meat from outdoor production as safer
  - incorrectly connection of high welfare standards with high food safety standards
- Traditional food safety measures not fulfilled in systems where there are higher interactions with environment
  - e.g. control of feeding and quality of drinking water



### Case story 3 – outdoor prod.



- Demand for outdoor reared chicken will continue to increase due to consumer perception about animal welfare
- Challenge for industry to keep same level of food safety in broiler production.
  - New food safety measures needed
  - As well as food safety information to the consumer
- New risk reducing invention (Sonosteam) with potential to eliminate *Campylobacter* from broiler carcasses by use of hot steam and ultrasound in pipeline
  - Results are promising, but usefulness should be addressed
    - Organoleptic quality, practical implementation at processing plant, costs and consumers' willingness to pay

### Case story 4 – Swine fever



- Outbreaks of disease like classical swine fever (CSF) require actions to limit spreading of disease and eliminate infected animals
  - EU minimum requirements includes culling of infected herds and dangerous contacts
- Large number of animals culled during outbreak
  - The Netherlands (CSF) 1997 & UK (FMD) 2001
  - Majority of culled animals not infected but culled to stop epidemic from spreading

### Case story 4 – Swine fever

- Public indignation about cullings lead to search for other strategies – And vaccines might be a solution
- However, for a country with large export, use of vaccines might result in long-term halt in export
  - Because countries outside EU might not have confidence in disease freedom in exporting country if vaccines have been used
  - Hence, it will not be the epidemic but the vaccine that is detrimental to the industry



## Case story 4 – Swine fever

- Identification of other cost effective risk mitigating measures therefore still needed
- Understanding needed of what went wrong when outbreak turned into epidemic
  - Was it for example:
    - Late introduction of national stand-still?
    - Illegal transports / high number of movements?
    - High animal/ herd density in outbreak area?
- Distinguish between risk of introduction and risk of spreading infection as well as between measures taken during peace time and during outbreaks



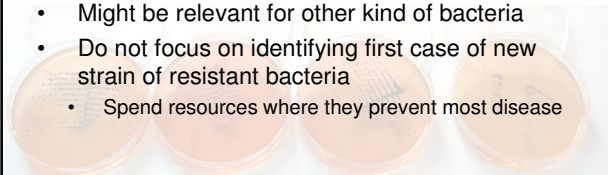
## Lessons learnt by industry - 1

- Be careful when designing survey or surveillance
- Clearly identify objective and reaction related to different expected outcomes
- Protect participating farmers and slaughterhouses against unreasonable side-effects to ensure future research cooperation
- Consider whether survey or surveillance will produce needed knowledge
  - Is it worth its expenses for the stakeholder that will have to pay for it?



## Lessons learnt by industry - 2

- With respect to *Salmonella*:
  - Focus on all kinds of *Salmonella* that cause harm in humans
  - Will lead to prevention of many more human cases than when just focusing on one group of *Salmonella* - like the resistant ones
- Might be relevant for other kind of bacteria
- Do not focus on identifying first case of new strain of resistant bacteria
  - Spend resources where they prevent most disease



## Lessons learnt by industry - 3

- Do not follow traditional rules *per se*
  - Like advocating that all infections should be dealt with at the source
- Identify cost-effective and suitable measures
  - For example measures applied during or after slaughter
    - If they secure same level of food safety



## Lessons learnt by industry - 4

- Conduct cost benefit analysis (CBA) or cost effectiveness analysis of planned actions
- Include effect on trade when dealing with different control measures
  - in particular with respect exotic, contagious livestock diseases
- Discuss which elements to include into analysis
- Equity should be dealt with
  - = Who is receiving benefits and who is paying for costs
- Discuss time horizon to consider
  - Costs often paid early on whereas benefits arise later

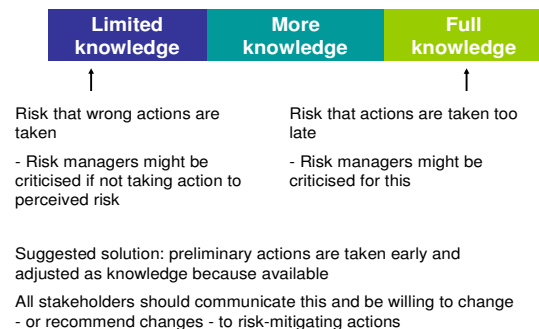


## Lessons learnt by industry - 5

- Risk-mitigating measures often introduced when limited knowledge available
  - Actions taken at early stage do not always deal with risk adequately
  - Full knowledge not required before actions are introduced
    - Because then actions might be introduced too late
- Preliminary actions a solution



### The knowledge trap



## Lessons learnt by industry - 5

- Communicate that preliminary actions are taken
- Will make it easier to make use of new knowledge with regard to where risk mitigation makes most sense
  - Hence, we should be willing to change or even remove measures put in place initially,
    - if it turns out that hazard was not a hazardous as perceived initially
  - Likewise, efforts should be redirected if risk was higher/lower in another species / age group /commodity /region than suspected at first
- Ergo: be prepared to take programs up for revision every once in a while



## Industry - Academia

- As can be understood from previous examples:
  - Industry in need of experts that are capable of seeing the entire value chain
  - Moreover, industry calls for cost effective solutions that are meaningful, timely and easily implemented
- VPH/academia has something to offer if they can see the issue from the industry angle
- To ensure this, industry should be in constant communication with academia



## Industry – Veterinary services

- Industry should also be in constant communication with veterinary services
  - Because they are the risk managers
  - Important to understand how a regulation works and should be interpreted
    - Clear description of when you comply or not important for success of a regulation
      - And hence, the chance that the regulation will lead to intended goal

## Training required

- Need to ensure communication between academia, industry and veterinary services
  - Training of ECVPH experts or resident training within industry most-suited
  - Participation in ECVPH also useful
  - We could also switch jobs every 5 years



## Conclusion

- Education, training and active participation in the ECVPH should lead to:
  - Strengthened cooperation between industry, universities and world (animal) health organisations
  - Increased knowledge of risk based surveillance and cost effective control of animal disease, zoonoses and food borne diseases in livestock.
  - Sharing of experience between industry, universities and world health organisations about risk communication
- VPH experts that can work in this cross-field will be highly valued by the industry

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