

Emerging Science, public pressure and vagaries of policy-making

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Caveat

The following lessons learned reflect my
>20 years working with BSE at the
interface of science, politics and beliefs

Key concepts

- Lessons Learned
- Dealing with emerging science during outbreaks of new diseases
- Integrating science with emergency preparedness planning
- Obstacles to communicating science and policy

Lessons Learned

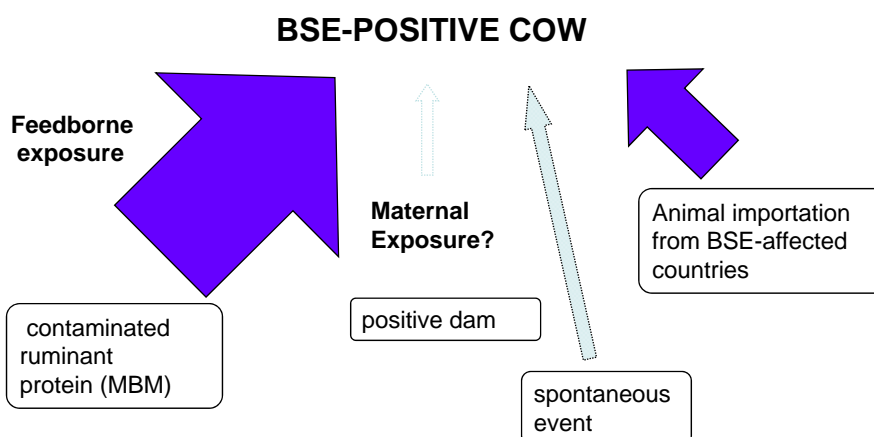
- Science is dynamic, beware of “facts”
- Complexity is the norm, not the exception for contagious animal diseases
- Complex issues can't be solved by simple solutions or science alone

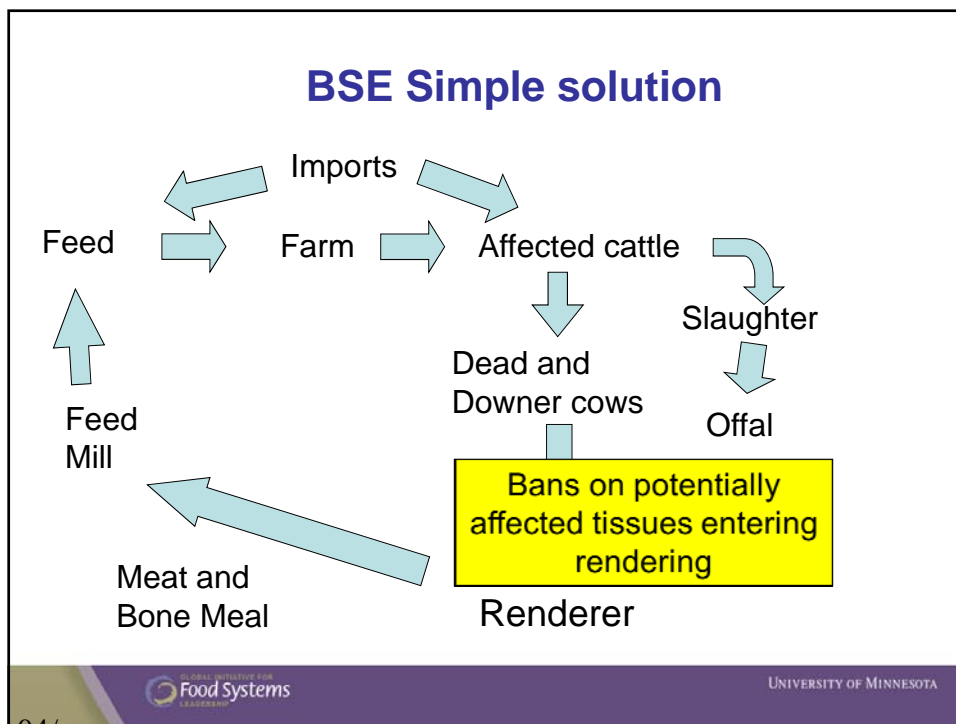
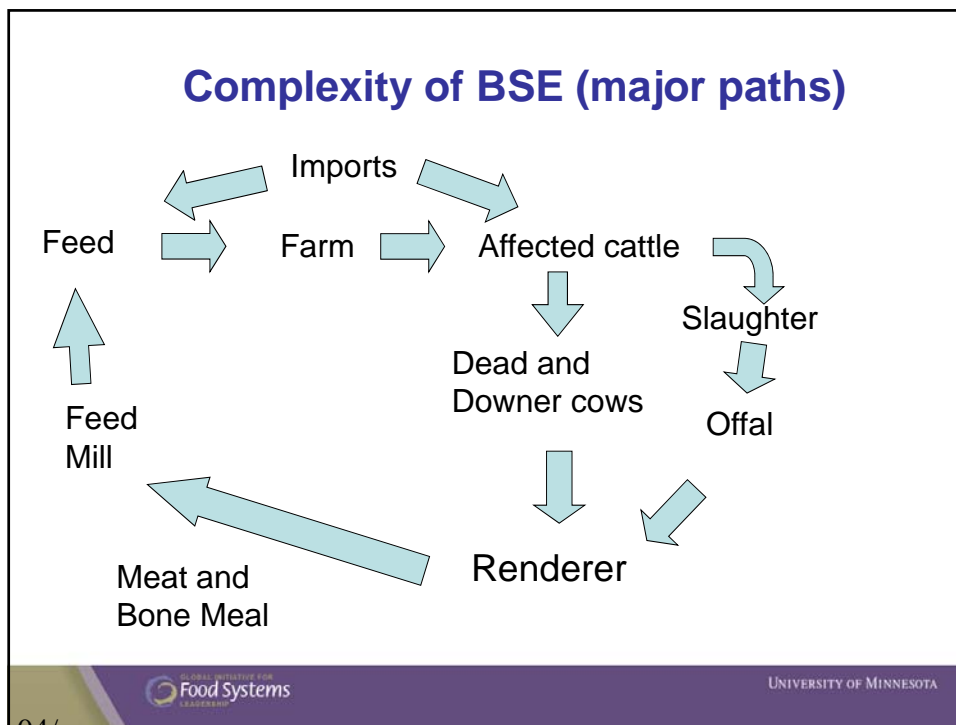
“What we know, just ain’t so...”

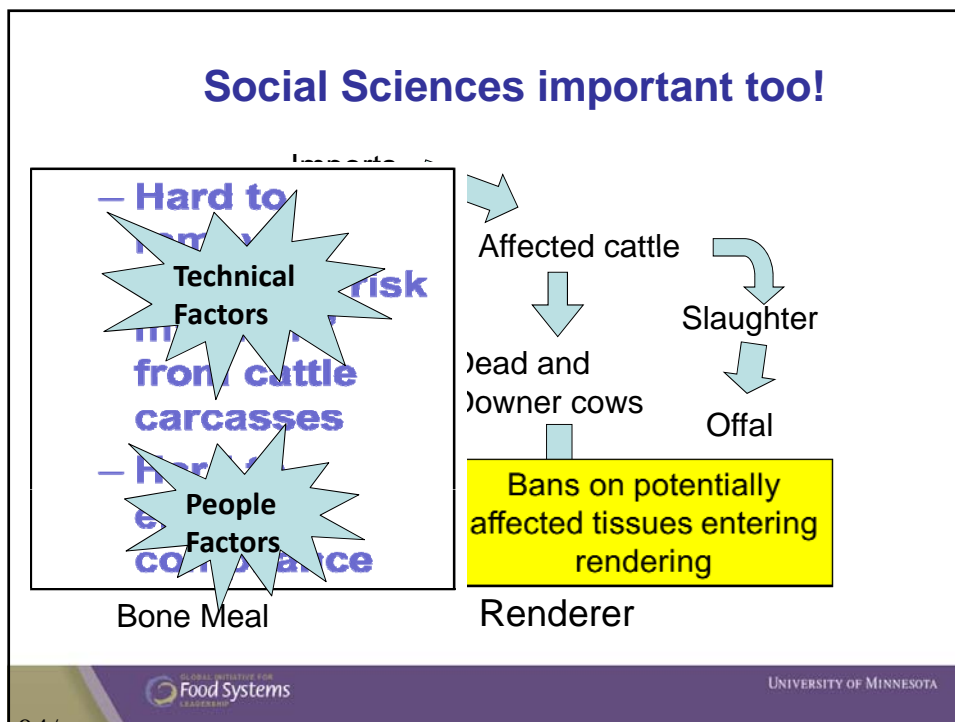
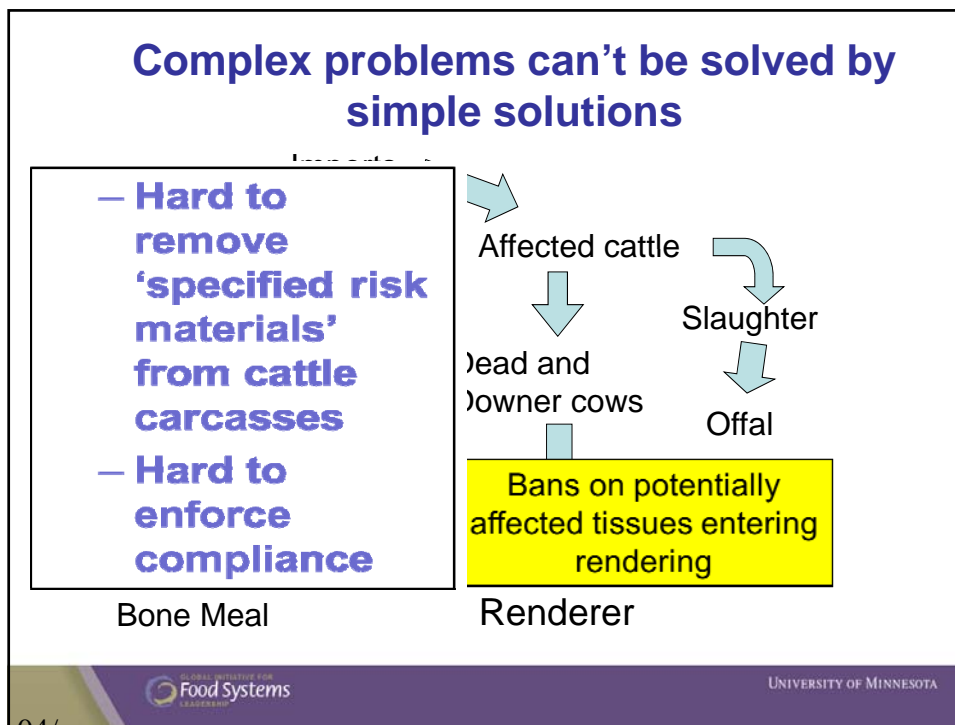
- Proteins don’t cause ‘infectious’ disease
- Prion diseases are host specific
- We won’t get it here... (pick your country)

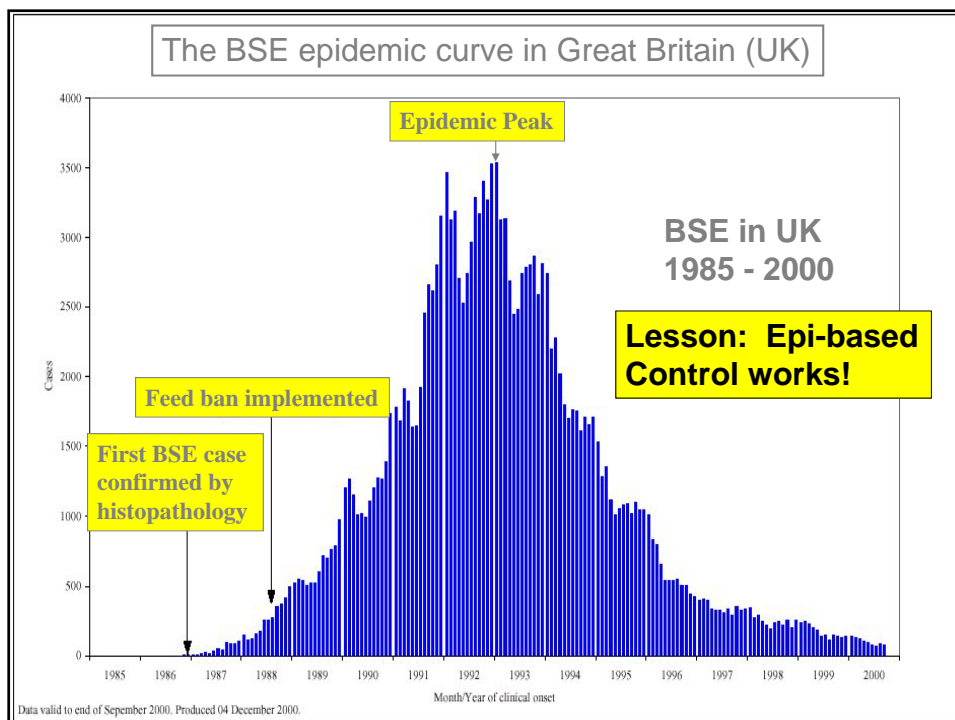
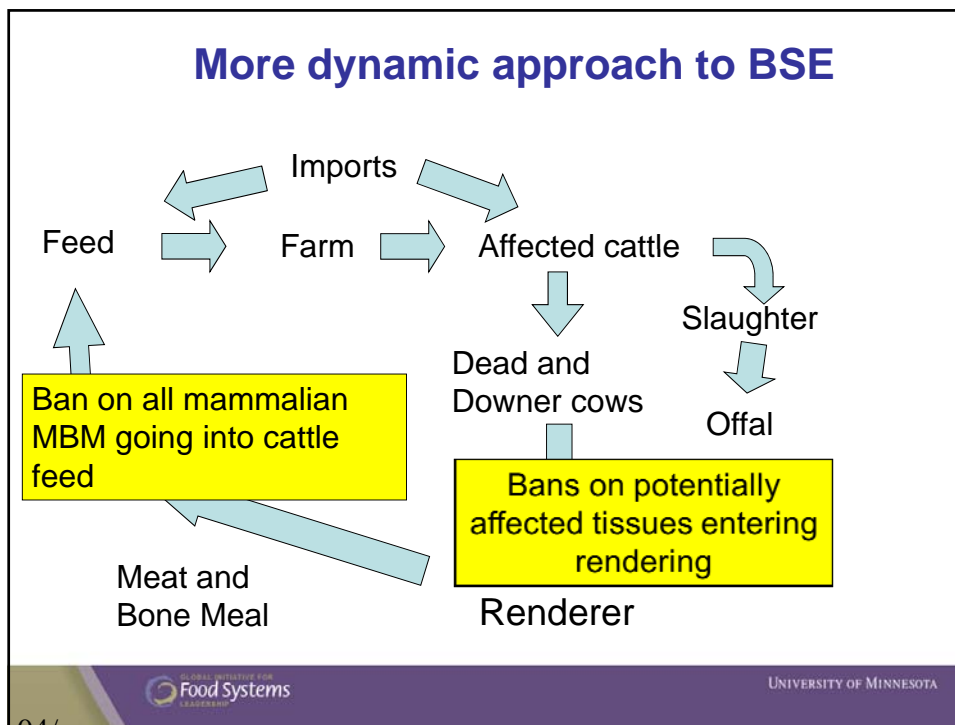
*Don’t let ‘facts’ become beliefs,
Stay true to the scientific method...*

Classic epidemiology: BSE Risk Factors for cattle









Dealing with Emerging Science

- Accept changing science and prepare to adapt policies...
 - Descriptive rather than prescriptive policies
- Implement aggressive risk communication
 - “Be first, be right, be credible” (CDC)

Risk Communication 101

- “New and emerging” = **frightening!**
- Fear changes the way we think
 - Process info differently
 - Focus on fight or flight
- Must adapt communications...
 - Empathy and caring
 - Meet stakeholders’ information needs

Effective risk communication

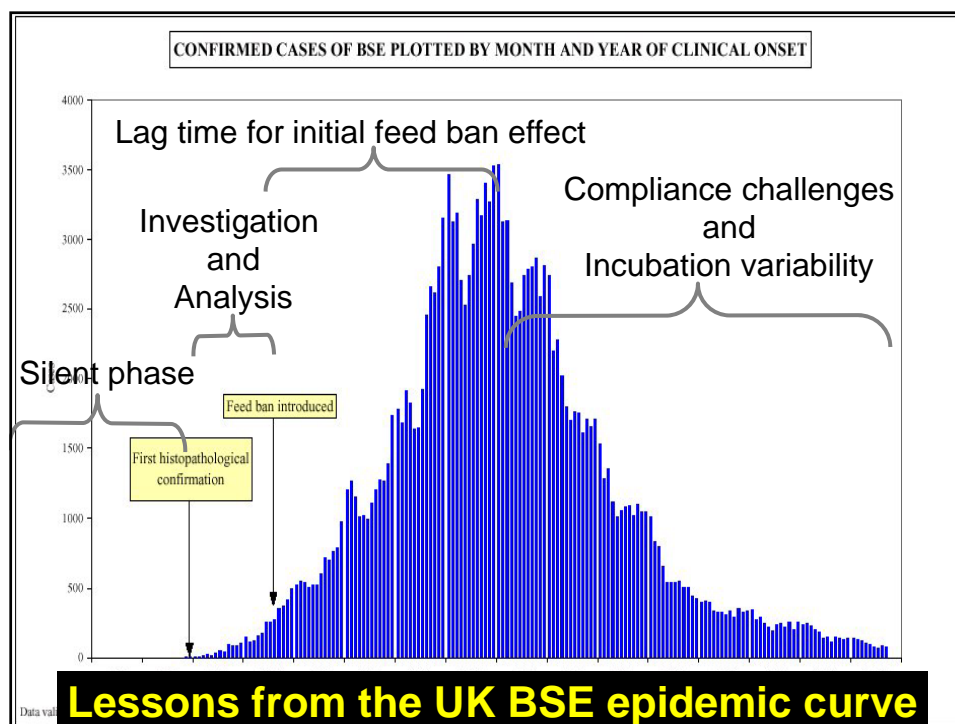
- All potentially affected parties involved in the entire risk analysis process from beginning
- Extensive distribution of factual information supplanted supposition
- Open government processes and advisory committee meetings
- Contingency plans for emergency and crisis risk communication

Crisis and Emergency Risk Communication

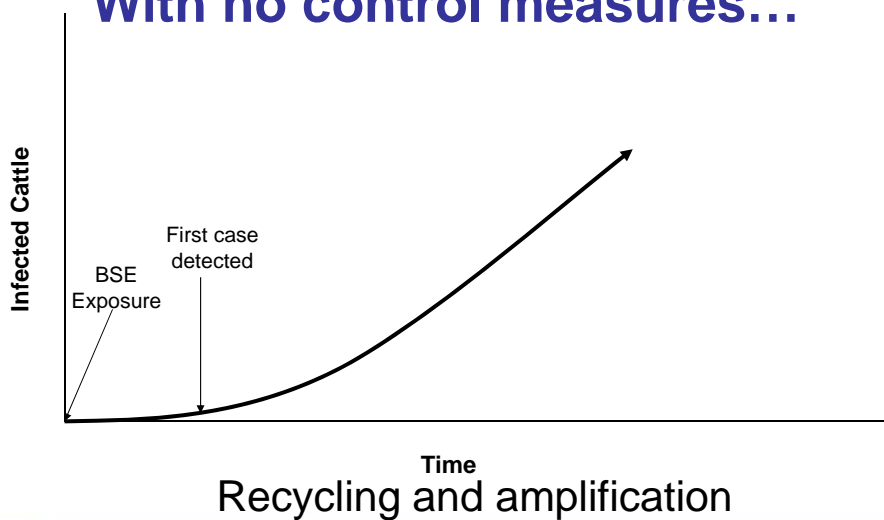
- Tell them
 - what you know
 - what you don't know
 - how you're working to address the things you don't know
 - When you'll get back with more information
 - AND with the information you have, how they can best protect themselves, family, livelihood

Emergency Preparedness: Planning and Science

- Anticipate (what can go wrong, will go wrong)
- Conduct proactive risk assessments
- Build dynamic coalitions – public, private, academic partnerships
- Practice & preach



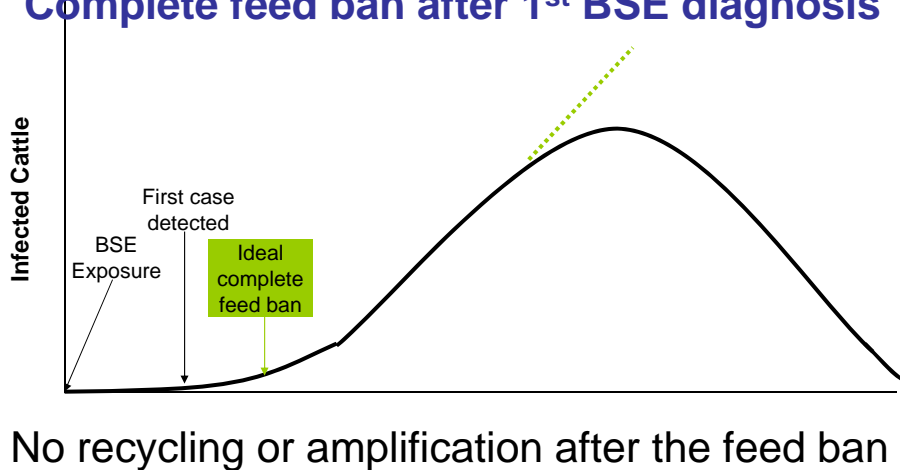
Plotting the BSE epidemic curve With no control measures...



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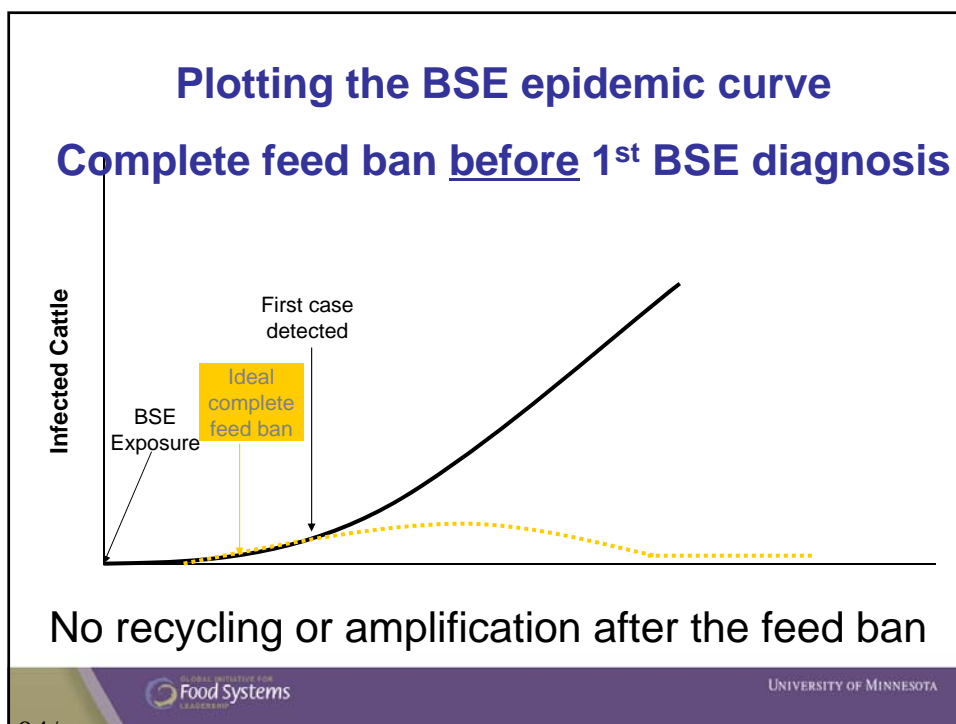
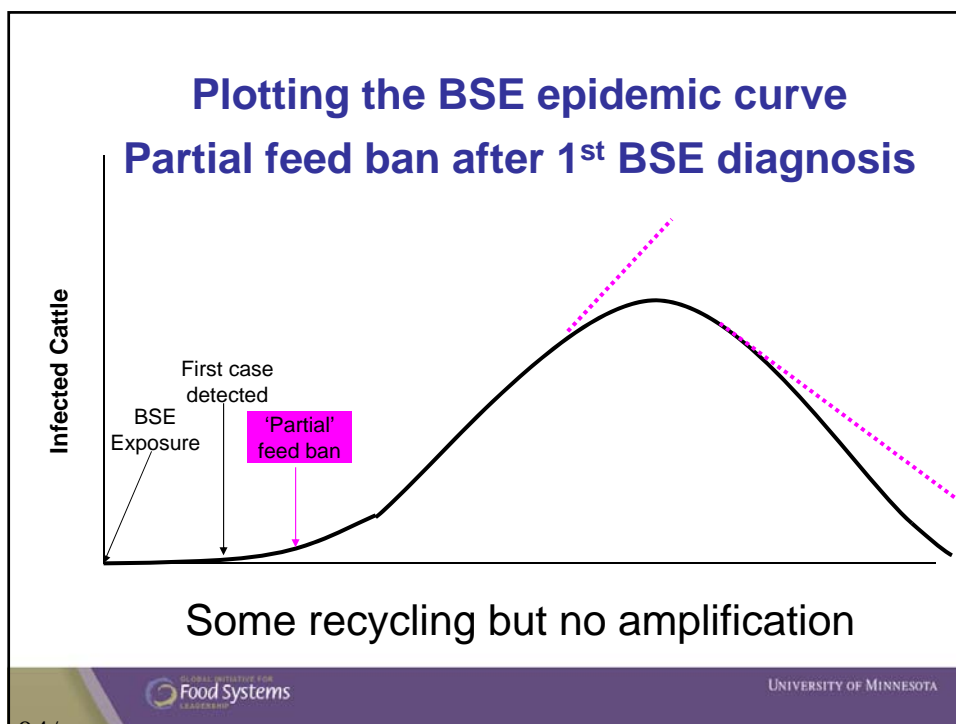
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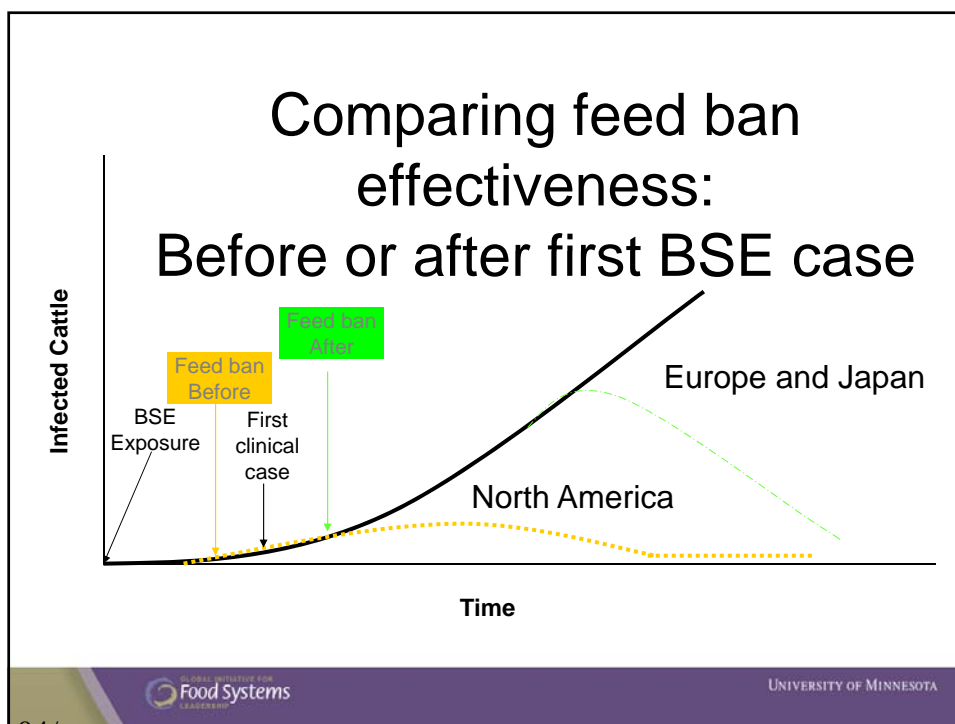
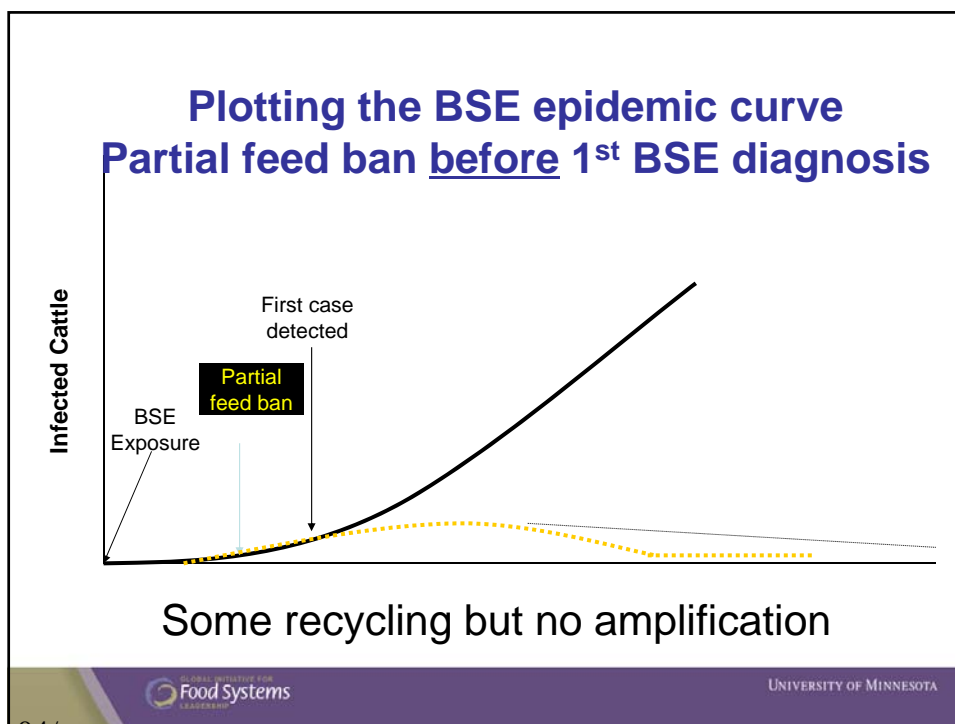
Plotting the BSE epidemic curve Complete feed ban after 1st BSE diagnosis



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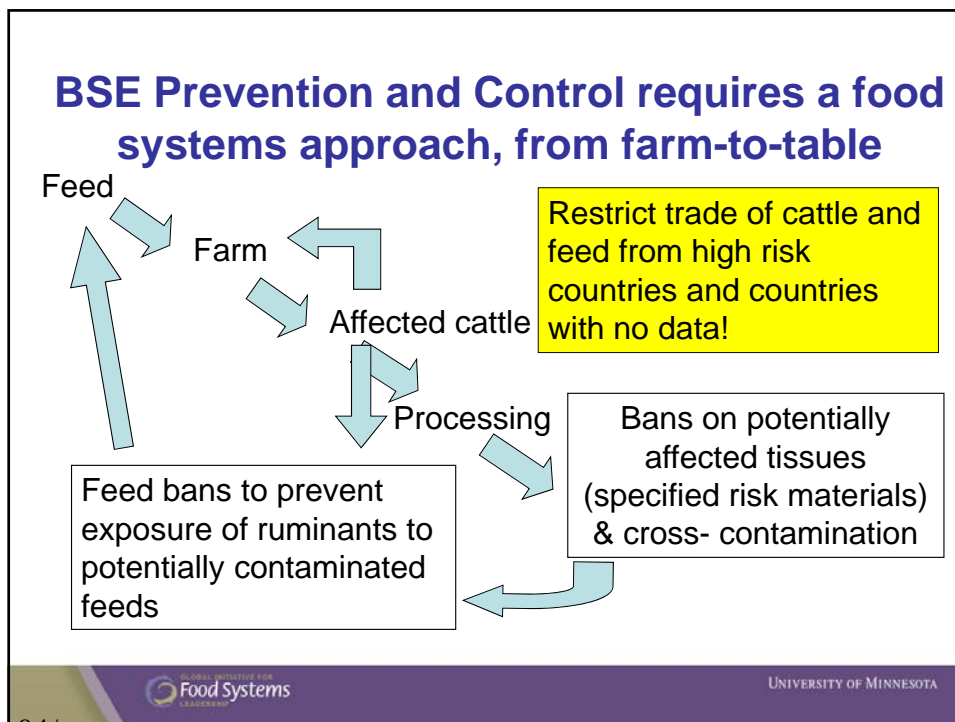


Will it happen here (or there)?

- Country-level Risk Assessments
 - To assess potential exposures
 - To estimate consequence if occurs
 - To create policy related to trading partners
- If so, will we see an epidemic like UK?
- If it happens, where/how will it start?

BSE risk status can be determined by assessing risks:

- consumption by cattle of ruminant MBM
- imports of potentially contaminated MBM
- imports of potentially infected cattle
- epidemiological situation re: animal TSEs
- methods of rendering and animal feed production



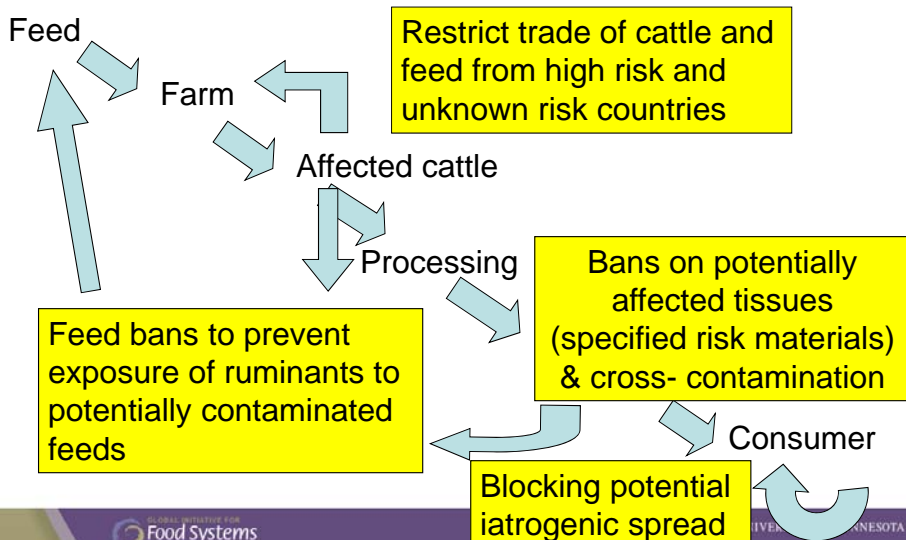
Is BSE a zoonoses?

- Extrapolating from the known...
- Cluster analysis
- When is enough enough?
- Mouse inoculation studies
- Molecular work

Is BSE a zoonoses?

- Ex... n...
- **Lessons learned:**
 - You can't prove a negative!
 - Never say never!
 - Hope for the best and prepare for the worst
- Molecu...

BSE & vCJD Prevention and Control requires a SYSTEMS approach for food and medical



But lest we forget

- Zero risk is unachievable
- Risk analysis demonstrates the need for multiple and redundant safeguards
- Risk Analysis is continual process
 - Re-evaluate risk regularly
 - Refine risk management strategies
 - Continue strong risk communication
 - Involve all potentially affected publics

Science and Policy: obstacles to communication

- Not listening...
- Failure to validate concerns of stakeholders
- Expressing certainty
- Not communicating enough....

What caused the global BSE epidemic?

- Prions?
- Post WWII search for alternative proteins?
- Changes in calf feeding practices?
- Pressure for higher milk production?
- Consolidation of feed industry?
- European Community Ag policy?
- Genetically susceptible humans?
- All of the above (and more!)

BSE/vCJD is a wicked problem!

- Can't completely be understood
- Demands action, yet no simple technical "solution"
- Always unanticipated/unintended consequences to our actions
- Require different approach to manage
- **Note: scholars call these "wicked problems", "social messes", "grand challenges"**

To deal with complex problems

Create shared understanding of the problem in context of 'systems' and commitment to manage together

- Embrace 'One Health' perspective
- Use systems thinking
- Employ Collaboration and partnerships
 - Called “shared leadership”

Why do complex problems demand 'shared leadership'?

- No “one” is in charge!
 - Shared responsibility but no overall authority
- Need resources and initiative from many perspectives, disciplines, sectors
- Need to be able to motivate people and organizations towards desired results

Lessons Learned

- Beware of “facts”
- Complex issues rarely have simple solutions
- Evaluate epidemics from a macro-epi view
- Options always exist for prevention/control
- Risk communication plays vital role
- Progress involves both science and politics

Credits (1)

- John Wilesmith et al for pioneering epi
- Gerald Wells et al for identification, pathogenesis transmission studies
- Kevin Walker and USDA APHIS CEAH colleagues for 1st country risk assessment
- Stuart MacDiarmid et al for OIE international standards for trade

Credits (2)

- Philip Comer et al for pioneering BSE risk assessments
- European Commission for developing country risk assessment protocol
- Peter Sandman and Vince Covello for practical guidance on risk communication
- Danny Matthews for practical applications of science in policy

Credits (3)

- All my USDA APHIS Veterinary Services and FSIS, FDA and CDC colleagues who worked so hard to prevent BSE entry into the US and took proactive measures to reduce the spread long before it was detected!