

Why is Emergency Management Research Important to Ontario

**Emergency Management Research Expo
December 7, 2012**

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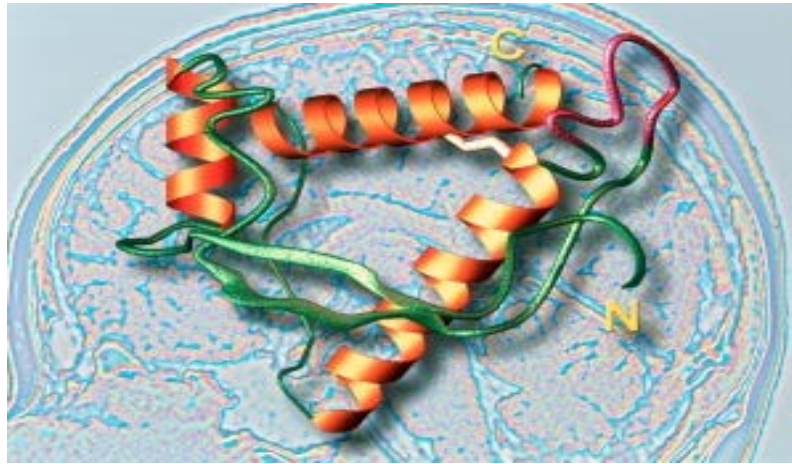
Why is it important?

- Human health – prevention of zoonotic disease
- Economic sustainability
- Animal health and preservation of the food supply
- Rural economic vitality
- Environmental consequences
- Consumer / public confidence
- International confidence

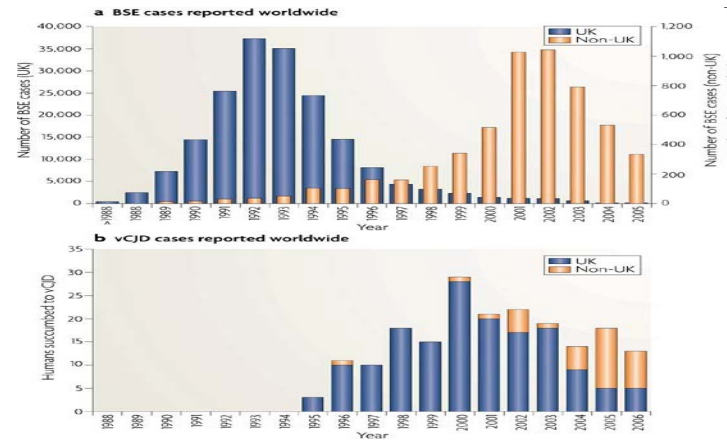
Context - Why?

- Early detection and prevention + coordinated timely response =
Decreased pain and suffering for people, communities and businesses
- Compromises in early detection, prevention, response and mitigation dramatically contribute to financial loss and devastation to the animal and plant resource base
- Research can assist at each critical point in the emergency continuum
- Creating a coherent interconnected emergency network
- Eg. Animal Health Australia

Canadian examples - BSE



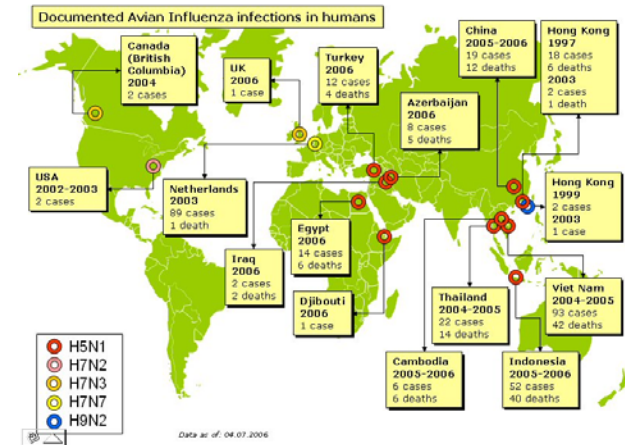
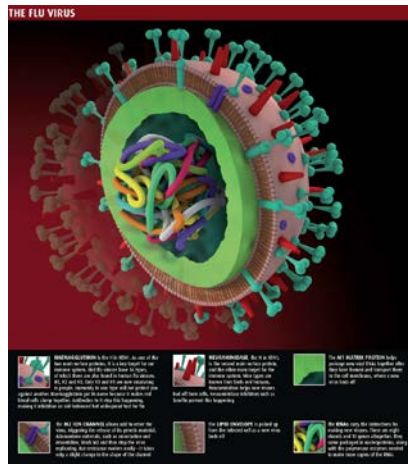
- BSE – 2003
- International panel conclusions
- Market interruption



Biology



Avian influenza



- Disposal, euthanasia, biosecurity, human ppe
- Coordination of response in an integrated system



Success vs failure

- Early detection – eg FMD UK
- Surveillance – classical, syndromic, social media, non-traditional datasources
- Biosecurity as a prevention – where is the best CCP
- Effective comprehensive response utilizing broad resource base
- Emergency management systems eg ICS
- Crisis communications
- Understanding of the Business continuity requirements
- Human social requirements in an emergency

Plant Health - examples



- The emergency plant health issues of recent include:
- Boxwood Blight identified in the US in 2011, found in BC and Ontario 2012, Addressed by OMAFRA and University of Guelph Through Emergency management fund.
- Spotted Wing Drosophila identified several years ago in US, identified in Ontario in 2010, being addressed by U of G, OMAFRA
- Brown Marmorated Stink Bug, Identified in the US several years ago, Identified in Ontario by OMAFRA in 2011, being addressed by OMAFRA, AAFC, Univ. of Guelph
- Plum Pox virus, identified in US in 1999, Identified in Ontario in 2000, attempts to eradicate from Niagara discontinued in 2011, now under management with very few tools, the disease and management is being addressed by CFIA, AAFC, OMAFRA

Climate Change

- Climatic change
- “The new normal”
- Actuarial information
- Top 10 Cdn weather disasters from a financial perspective
- Ontario Centre for Climate Impacts and Adaptation Resources - OCCIAR
- In Ontario, climate change will manifest itself in many ways including:
 - Changes in precipitation regimes i.e. wetter winters, rainier winters and dryer, hotter summers;
 - Changes in drought frequency and severity;
 - Changes to the frequency and intensity of storms;
 - Increases to average annual and average seasonal air temperatures;
 - Warmer winter temperatures, particularly daytime minimum temperatures;
 - Changes in soil temperature and moisture
- <http://www.climateontario.ca/doc/workshop/2011LakeSimcoeAgriculture/ChangingWeather-ChangingClimate-Douglas.pdf>

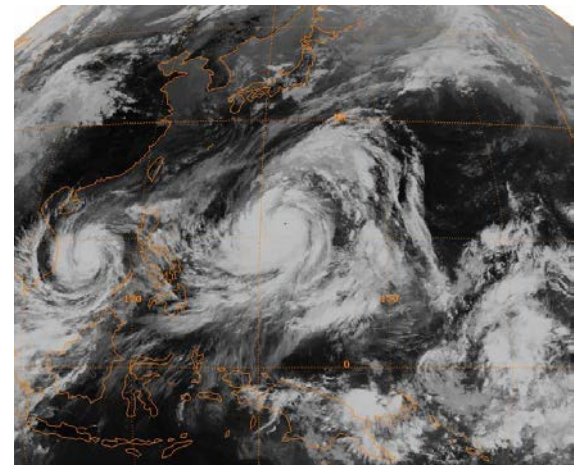


Plant health

- Canada's plant resources are critical to the well-being of all Canadians. Invasive alien plants and plant pests can threaten biodiversity and the economy. Experts have concluded that invasive species are the second most serious threat to biodiversity after habitat loss. In their new habitat, invasive alien plants and plant pests may become new predators, competitors, parasites, or diseases and thus threaten domestic species and Canada's plant and plant product production.
- There is a general consensus that it costs less to deal with invasive plants, pests, and diseases before they become established. In protecting Canada's plant resources, The risks associated with changing environmental conditions, the growing globalization of trade, and the increasing diversity of plants and plant products being imported into Canada—currently estimated at around 84,000 shipments a year.

Global weather disasters

- Katrina – animal population – cats and dogs
- Tsunami Japan – radiation exposure to crops and livestock
- Earthquakes/ Hurricanes – disruption to “just in time” food distribution systems



Emerging and re-emerging diseases

- Nipah, Hanta, Schmallenberg, Ebola
- Influenza viruses
- Vector borne diseases
- Food safety emergencies – O157/H7, Salmonella species
- Environmental/ wildlife emergencies – CWD, white nose syndrome
- FADs – FMD, Hog Cholera, Newcastle , Bluetongue, AI
- TB , Brucellosis

What do we need?

- **Go back to the slide on success vs failures**
- **Focus efforts on early detection systems in the age of social media eg Twitter/CDC**
- **Effective understanding of the critical pathways of control in all sectors**
- **Enhanced emergency management analysis**
- **The most effective ways to rebuild industries and analysis to deduce the benefit of pursuing industry re-establishment**
- **Improved information sharing in the event of emergencies**
- **Improving linkages between decision makers and researchers in real-time.**
- **Effective crisis communications for scientists**

Emergency Management

- There will be more incidents - either real or perceived
- They usually follow “Black Swan” theory
- The resilient, flexible, prepared societies cope and flourish eg . Japan
- Countries with poor systems can be severely damaged and confidence irreversibly challenged eg . UK

- Research holds the key to adaptation in the face of rapid change