Equine Disease Surveillance and Response: Successes and Challenges

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TEXAS HPAI 2004

How to “clean up” an outbreak

03/20/2004
Major Equine Disease Events the Past 15 Years

- Since 2007: 826 EIA cases
- 2008 Florida EP
- 2009 Missouri/Kansas EP
- 2009 EP Texas Ranch Outbreak
- Since 2009: 495 EP cases
- 2006 WI CEM
- 2008-2010 Multi-State CEM
- 2010 CA CEM
- 2011 AZ CEM
- 2013 CA CEM

- 2013 FL/PR CEM
- 2006 NM EVA
- 2011 Multi-State EHM
- Since EDCC, hundreds of EHM outbreaks
- 2004-2006 VSV
- 2009 VSV
- 2010 VSV
- 2012 VSV
- 2014-2015 VSV
- 2019 VSV
- 2,616 EEE cases
- 5,897 WNV cases
Equine Infectious Anemia (EIA)

**Successes**
- 0.004% prevalence in the U.S.
- VS Guidance 15201 “Approval of Laboratories to Conduct Tests for EIA”
  - Monthly summary reporting of tests
  - Forwarding of non-negative samples
  - Higher standards for maintenance of lab approval
  - More contact with laboratories
- AAEP and EDCC assistance in education and outreach
- More states experienced with iatrogenic transmission cases, better tracebacks, more complete cohort testing

**Challenges**
- Shift in epidemiology to predominantly iatrogenic transmission
- Involvement of unsanctioned racing
- Education and outreach to bushtrack participants
- Limited disposition options for EIA-positive horses
- Illegal movement of horses from endemic regions with no control programs
- Lack of EIA researchers in the U.S.
Equine Piroplasmosis (EP)

**Successes**
- Identification of high-risk population
- Establishment of significant active surveillance
- Activation of NAHLN labs and availability of diagnostic testing
- High-dose imidocarb treatment program
- Eradication of disease from the Texas ranch outbreak

**Challenges**
- Maintaining surveillance in the high-risk population
- Illegal activity associated with bush track racing
- Illegal movement of horses from endemic regions with no control program
- Education and outreach
Contagious Equine Metritis (CEM)

**Successes**
- No outbreaks identified since 2013
- Last major outbreaks had an identified source
- New work at NVSL using whole genome sequencing
- Better outreach avenues available to communicate when an outbreak occurs (EDCC)

**Challenges**
- Lack of surveillance for the disease
- Expensive to diagnose and contain an outbreak
- Circumvention of import requirements
- Variability in oversight at CEM import quarantine centers
- CEM status of trading partners
- Biosecurity in equine semen collection and breeding operations
Equine Viral Arteritis (EVA)

**Successes**
- Gathering of information by EVA subcommittee – SAHO and lab questionnaire
- Reviewing and taking comments on EVA UM&R for revision
- New research indicating stallions’ genetic predisposition to shed virus

**Challenges**
- Lack of awareness among practitioners, owners, SAHOs
- Under-reporting of cases and/or absence of inclusion in differentials
- Laboratory reporting of positive EVA diagnostics
- Absence of DIVA strategy in diagnostics (serology)
- Preparation for next outbreak
EHV-1/EHM

• **Successes**
  - EHM Response Guidelines for SAHOs
  - Biosecurity Toolkit for Equine Events
  - Timely communication of cases/outbreaks through the EDCC
  - Better awareness throughout the equine industry
  - Industry-driven improvements to biosecurity and preparedness at events

• **Challenges**
  - Widespread and frequent movement of horses in the U.S.
  - Individual owners/trainers implementing responsible biosecurity
  - Continued misunderstanding of wild-type vs. neuropathogenic strain
  - Appropriate isolation and control during a response
  - Variability in diagnostic assays and interpretation
  - Lack of needed research
EEE and WNV

**Successes**
- Outreach to equine owners and the industry
  - SAHO press releases, biweekly reporting of cases on APHIS website, EDCC alerts
- More consistent ArboNET reporting with better SAHO and state public health communication
- Efficacy of vaccination in equids

**Challenges**
- Misinformation on how equine cases relate to human cases
- Under-reporting of equine cases
- Data collection from confirmed cases
- Unvaccinated and under-vaccinated equine populations
Vesicular Stomatitis (VSV)

**Successes**
- Changes to VSV response in 2015 – significant reduction in state/fed resource strain while maintaining disease control
  - Reduction in quarantine period
  - Use of accredited veterinarians
  - Activation of NAHLN labs
- VSV Research Improvements
  - VSV Grand Challenge Project (ARS/APHIS)

**Challenges**
- Broad variability in interstate movement restrictions
- International movement restrictions
- Vector mitigation strategies available at premises level only and with variable efficacy
- Illegal interstate movements
Other Foreign and Emerging Diseases

**Successes**
- Better communication/interaction with the equine industry on infectious diseases
- More in-depth discussion on improvement of import protocols
- Network of collaboration with laboratories and animal health officials in other countries
- Working to improve diagnostic capabilities for certain transboundary diseases

**Challenges**
- Absence of tools for control of vector-borne diseases (arboviral and tick-borne)
- Unauthorized FAD testing at unapproved laboratories
- Limited research capabilities in-house and limited research interest in the private sector and academia
- The Unknown
Thank you

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