

## Form A: Premises Level Questionnaire

This questionnaire consists of questions about the premises at which the EHM index case was identified. These questions will help identify potential EHM risk factors for both the index case and subsequent cases of EHM.

### Abbreviations for this questionnaire:

**EHV-1:** Equine herpesvirus-1

**EHM:** Equine herpesvirus myeloencephalopathy

**Y=Yes, N=No, D/K=Don't know, NA=Not applicable**

### Definitions for this questionnaire:

**Equid:** All species of equid such as donkeys, mules, ponies, horses, etc.

**Horse:** All full-size horse breeds (14 hands or more at withers) including foals on the premises (does not include donkeys, mules, ponies, and miniatures).

**Resident equid:** Equids, including foals, which have spent or are expected to spend more time at this premises than at any other premises, even if not owned by the owner of the premises. In other words, this premises may be considered the animal's "home."

**Nonresident equine:** Not a resident equid as describe by the definition above.

**Isolate:** To prevent nose-to-nose contact with other equids from this premises, prevent the sharing of equipment such as brushes, combs, and buckets between equids, and establish the practice of hygienic methods for personnel.

**In the last 30 days:** Includes the past 30 days from the date of this interview. When asked about a resident equid in the last 30 days, consider equids that may no longer be on the premises.

**Premises identification** \_\_\_\_\_

**Date of data collection:** \_\_\_/\_\_\_/\_\_\_

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0579-0376 The time required to complete this information collection is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

**Questionnaire A-F  
OMB Approved  
0579-0376**

**EXP Date  
XX/201X**



b. How many new resident equids were added to the premises in the last 30 days?  
# \_\_\_\_\_ head

c. How many of the equids added came from:

1-Within State	# _____ head
2-Outside State, within U.S.	# _____ head
3-Canada	# _____ head
4-Mexico	# _____ head
5-Outside North America	# _____ head
6-Unknown location	# _____ head
7-Total items (add items 1-6)	# _____ total

d. For the majority of these new **resident** equids, did you (this premises) always require (1), sometimes require(2), or never require(3):

	<u>Always</u>	<u>Sometimes</u>	<u>Never</u>
1-Official health certificate	1	2	3
2-Veterinary examination other than for official health certificate	1	2	3
3-Equine herpes vaccination within the past year	1	2	3
4-Quarantine or isolation prior to contact with resident equine	1	2	3

3. a. Did you permanently remove any **resident** equids from the premises in the last 30 days (including deaths)?

Y	N	D/K
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**If “No” or “Don’t know,” skip to Question 5.**

b. Why were these equids removed from the premises?

1-Died (not euthanized)	# _____ head
2-Euthanized	# _____ head
3-Sold or traded	# _____ head
4-Other (specify)	# _____ head

4. a. How many **nonresident** equids have visited or been stabled at the premises in the last 30 days?

1-Horses (excluding miniature horses)	# _____ head
2-Mules	# _____ head
3-Miniature horses	# _____ head
4-Donkeys or burros	# _____ head
5-Ponies	# _____ head
6-Other equids (specify: _____)	# _____ head
7-Total (add items 1-6)	# _____ head

**If # head=0, skip to Question 6.**

b. For the majority of these nonresident equids, did you (this premises) always require(1), sometimes require(2), or never require(3):

	<u>Always</u>	<u>Sometimes</u>	<u>Never</u>
1-Official health certificate	1	2	3
2-Veterinary examination other than for official health certificate	1	2	3
3-Equine herpes virus vaccination within the past year	1	2	3
4-Quarantine or isolation prior to contact with resident equine	1	2	3

5. Have there been any dynamic changes for the equids on the premises in the last 30 days? (Circle all that apply.)

- 1-No change in dynamics
- 2-Weaning
- 3-Fighting
- 4-Changing of members within groups
- 5-Construction on premises
- 6-Other (specify: \_\_\_\_\_)

### SECTION 3: HEALTH

1. **Prior to this outbreak** of equine herpesvirus-1, how often did you check the body temperature on **healthy equids** (nonsymptomatic of an infectious disease)? (Circle one.)

- 1-Never
- 2-Less than once a day
- 3-Once a day
- 4-Twice a day
- 5-Other (specify: \_\_\_\_\_)

2. How often did you check the body temperature on an equid with **signs of an infectious disease** such as equine herpesvirus-1 prior to this outbreak? (Circle one.)

- 1-Never
- 2-Once a day
- 3-Twice a day
- 4-Other (specify: \_\_\_\_\_)

3. **Since this outbreak** of equine herpesvirus-1, how often do you check the body temperature on **healthy equids** (no clinical signs of an infectious disease)? (Circle one.)

- 1-Never
- 2-Once a day
- 3-Twice a day
- 4-Other (specify: \_\_\_\_\_)

4. Since this outbreak of equine herpesvirus-1, how often are you checking body temperatures in equids **with signs of an infectious disease**?

- 1-Never
- 2-Once a day
- 3-Twice a day
- 4-Other (Specify: \_\_\_\_\_)

5. How many pregnant mares were on this premises in the last 30 days?  
# \_\_\_\_\_ head

6. In the **last 30 days**, how many mares aborted or had stillborn foals?  
# \_\_\_\_\_ head

In the next question, signs of acute upper respiratory infection must include a cough and/or nasal discharge (serous or mucoid) and at least one of the following: fever, malaise, off feed or decreased appetite, purulent nasal discharge, or enlarged lymph nodes on head or around the upper neck.

7. a. In the **last 30 days**, how many resident equids became ill with acute upper respiratory infection?

# \_\_\_\_\_ head

b. In the **last 30 days**, how many nonresident equids became ill with acute upper respiratory infection?

# \_\_\_\_\_ head

**If # head=0, skip to Section 4.**

8. Of these equids that became ill with acute upper respiratory infections, how many were the following age categories at the time they became ill?

	<u>Resident</u>	<u>Nonresident</u>
1-Foals less than 6 months old	# _____ head	# _____ head
2-6 months up to 18 months old	# _____ head	# _____ head
3-18 month up to 5 years old	# _____ head	# _____ head
4-5 years up to 20 years old	# _____ head	# _____ head
5-20 years and older	# _____ head	# _____ head
6-Total (add items 1-5)	# _____ head	# _____ head

## SECTION 4: BIOSECURITY

1. Which of the following best describes how far it is from this premises to the nearest premises with any type of equids? (Circle one.)

- 1-Adjacent
- 2-Less than 200 yards
- 3-200 yards to 1 mile
- 4-1 mile to 5 miles
- 5-200 yard to 5 miles
- 6-More than 5 miles
- 7-Don't know

2. Which of the following best describes the premises' general practice when **resident** equids leave the premises, have direct contact with **nonresident** equids and return? (Circle one.)

- 1-Resident equids never leave premises or never have contact with nonresident equids
- 2-Routinely isolate for at least 14 days after return to home premises
- 3-Only isolate for a cause such as disease or known exposure to disease
- 4-Routinely isolate before return to home premises
- 5-Never isolate returning equids
- 6-No resident equids on premises (e.g., equine event premises)

3. For infection control, do you ever require people (visitors, veterinarian, farrier, etc.) coming onto the equine premises to do any of the following? (Circle all that apply.)

- 1-Use separate or disinfected equipment
- 2-Change clothes or wear clean coveralls
- 3-Disinfect or change boots
- 4-Clean and disinfect their hands
- 5-Park vehicles away from animal area
- 6-Other (specify: \_\_\_\_\_)

4. a. Do you have a separate area designated for **isolation** or infection control?  
Y N D/K

**If "No" or "Don't know," skip to Question 5.**

b. **In the last 30 days** have you moved any equids with signs of equine herpesvirus-1 to this separate **isolation** area?  
Y N D/K

c. Where is this separate area located? (Circle one.)

- 1-Separate building
- 2-Same building away from other equids but common airspace
- 3-Same building, away from other equids with separate airspace
- 4-Other (specify: \_\_\_\_\_)

d. Do you restrict movement of personnel working with the animals in **isolation**?

Y

N

D/K

If "Yes," specify how: \_\_\_\_\_

5. In the last 30 days, have any of the following insect control methods been used?

(Circle all that apply.)

1–Repellents applied to equids

2–Insecticides applied to in or near equine housing area

3–Insecticides applied to pasture areas

4–Sticky tape

5–Bug zapper

6–Fly mask on equid

7–Fly tags attached to equine halters

8–Fly sheets on equids

9–Other (specify: \_\_\_\_\_)

6. Which of the following best describes how much time the **majority** of the **resident** equids spent confined indoors in the last 30 days? (Circle one.)

1–Never or rarely

2–Half the time or less

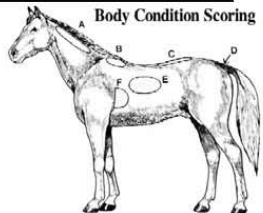
3–More than half the time

<b>Form B:Initial Equine Index EHM Case and Likely Exposed* to EHM Index Case Chart</b> This chart will provide basic descriptive information related to the index case as well as all equines likely exposed to EHM index case.				
<b>PREMISES NAME</b> _____		<b>TODAY'S DATE</b> ___ / ___ / ___		
Use the premises diagram and the codes on provided on the accompanying page to answer the following questions:				
<b>Equine Name or ID</b>				
<b>Location on premises:</b> Refer to premises diagram and enter assigned number	# _____	# _____	# _____	
<b>Age:</b> Enter months or years	___ mos <b>OR</b> ___ yrs	___ mos <b>OR</b> ___ yrs	___ mos <b>OR</b> ___ yrs	___ mos <b>OR</b> ___ yrs
<b>Gender:</b> Circle one. <b>If pregnant</b> list breeding date (see codes)	1 2 3 4 ___/___/___	1 2 3 4 ___/___/___	1 2 3 4 ___/___/___	1 2 3 4 ___/___/___
<b>Breed:</b> List code				
<b>** Fever</b> in the last 30 days: (temp. > 101.5F) Circle no or yes. <b>If yes</b> , list date of onset.	NO YES: Date ___/___/___	NO YES: Date ___/___/___	NO YES: Date ___/___/___	NO YES: Date ___/___/___
<b>** Neurological signs</b> in the last 30 days: Circle no or yes. <b>If yes</b> , select all codes that apply.	NO YES: _____	NO YES: _____	NO YES: _____	NO YES: _____
<b>Illness or injury</b> other than fever/neurological disease in last 30 days: Circle no or yes. <b>If yes</b> , select all codes that apply.	NO YES: _____	NO YES: _____	NO YES: _____	NO YES: _____
<b>Medications</b> in the last 30 days: Circle no or yes. <b>If yes</b> , select all codes that apply.	NO YES: _____	NO YES: _____	NO YES: _____	NO YES: _____
<b>Equine herpesvirus vaccination</b> in last 12 months: Circle no or yes. <b>If yes</b> , list most recent vaccination date, frequency/yr vaccinated, and product code (see codes).	NO YES: Date ___/___/___ Freq. ___ Code ___	NO YES: Date ___/___/___ Freq. ___ Code ___	NO YES: Date ___/___/___ Freq. ___ Code ___	NO YES: Date ___/___/___ Freq. ___ Code ___
<b>Contact with care providers</b> in the last 30 days: Circle no or yes for each	<b>Veterinarian:</b> NO YES <b>Farrier:</b> NO YES <b>Trainer:</b> NO YES	<b>Veterinarian:</b> NO YES <b>Farrier:</b> NO YES <b>Trainer:</b> NO YES	<b>Veterinarian:</b> NO YES <b>Farrier:</b> NO YES <b>Trainer:</b> NO YES	<b>Veterinarian:</b> NO YES <b>Farrier:</b> NO YES <b>Trainer:</b> NO YES
<b>Travel off the premises</b> in the last 30 days Circle no or yes. <b>If yes</b> , select code that applies.	NO YES: _____	NO YES: _____	NO YES: _____	NO YES: _____
<b>Body Condition Score</b> :Circle one. (see codes)	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9
<b>Exercise status:</b> Circle one. 1=competition, 2=training, 3=maintenance, 4=minimal exercise	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
<b>Primary use of equine:</b> Circle one. <b>If breeding female</b> list date of last live birth(see codes)	1 2 3 4 5 ___/___/___	1 2 3 4 5 ___/___/___	1 2 3 4 5 ___/___/___	1 2 3 4 5 ___/___/___
<b>FOR RACE HORSES ONLY:</b> Use of Detention Barn in last 30 days. Circle no or yes.	NO YES: Prerace exam YES: Post race drug Testing	NO YES: Prerace exam YES: Post race drug Testing	NO YES: Prerace exam YES: Post race drug testing	NO YES: Prerace exam YES: Post race drug testing
<b>FOR RACE HORSES ONLY:</b> Does the trainer of this horse have his/her own pony horse?	NO YES	NO YES	NO YES	NO YES
*Exposed equines are those who have shared airspace and/or had direct physical contact with the index case.				
**If there is a history of fever or neurologic disease in the last 30 days proceed to Form D.				



## Codes for Form B

<b>Gender:</b> 1- Intact male 2- Castrated male 3- Open female 4- Pregnant female, list breeding date	<b>Breed:</b> 1- Appaloosa 2- Arabian 3- Draft breed 4- Morgan 5- Mustang 6- Paint 7- Saddlebred 8- Standardbred 9- Tennessee Walker 10- Thoroughbred 11- Quarter horse 12- Warmblood breeds 13- Mule/Donkey 14- Pony 15- Miniature horse 16- Other registered breed (specify _____) 17- Other non-registered breed (specify _____)	<b>Neurological signs:</b> 1- Complete recumbency (cannot rise with assistance) 2- Incomplete recumbency (can rise with assistance) 3- Hind limb ataxia 4- Front limb ataxia 5- Toe Dragging 6- Paresis 7- Head tilt 8- Circling 9- Bladder atony 10- Reduced tail tone 11- Reduced anal tone 12- Other (specify)	<b>Injuries or Illnesses:</b> 1- Respiratory disease 2- Colic 3- Lameness (equines requiring intervention treatment such as corrective shoes or medication) 4- Laceration / wound 5- Ophthalmic disease 6- Other trauma 7- Aborted or delivered stillborn 8- Other (specify)	<b>Medications:</b> 1- NSAIDs 2- Corticosteroids 3- Antiviral drugs 4- Antibiotic drugs 5- Lasix/furosemide 6- Prerace jug 7- Joint injection 8- Other (specify)
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<b>Equine Herpes Vaccine:</b> 1- Fluvac Innovator 4/1- Fort Dodge 2- Fluvac Innovator 5 – Fort Dodge 3- Fluvac Innovator EHV 6- Fort Dodge 4- Pneumabort-K+1b- Fort Dodge 5- Equivac EHV1/4- Fort Dodge 6- Prestige w/ Havlogen- Intervet 7- Prestige II w/ Havlogen- Intervet 8- Prestige V w/ Havlogen- Intervet 9- Prestige V + VEE w/ Havlogen- Intervet 10- Prestige IV Foal Shot- Intervet 11- Prodigy w/ Havlogen- Intervet 12- Calvenza EHV- Boehringer Ingelheim 13- Calvenza EHV/EI- Boehringer Ingelheim 14- Rhinomune (EHV-1)- Prizer	<b>Travel:</b> 1- trip less than 5 hours total (round-trip or one-way) 2- trip more than 5 hours total (round-trip or one-way)	<b>Body condition scores: refer to picture on left</b> 1- <b>Poor:</b> Animal extremely emaciated; spinous processes, ribs, tailhead, tuber coxae (hip joints), and ischia (lower pelvic bones) projecting prominently; bone structure of withers, shoulders, and neck easily noticeable; no fatty tissue can be felt. 2- <b>Very Thin:</b> Animal emaciated; slight fat covering over base of spinous processes, transverse processes of lumbar vertebrae feel rounded; spinous processes, ribs, tailhead, tuber coxae (hip joints) and ischia (lower pelvic bones) prominent; withers, shoulders, and neck structure faintly discernable. 3- <b>Thin:</b> Fat buildup about halfway on spinous processes; transverse processes cannot be felt; slight fat cover over ribs; spinous processes and ribs easily discernable; tailhead prominent, but individual vertebrae cannot be identified visually; tuber coxae (hip joints), appear rounded but easily discernable; tuber ischia (lower pelvic bones) not distinguishable; withers, shoulders and neck accentuated. 4- <b>Moderately Thin:</b> Slight ridge along back; faint outline of ribs discernible; tailhead prominence depends on conformation, fat can be felt around it; tuber coxae (hip joints) not discernable; withers, shoulders and neck not obviously thin. 5- <b>Moderate:</b> Back is flat (no crease or ridge); ribs not visually distinguishable but easily felt; fat around tailhead beginning to feel spongy; withers appear rounded over spinous processes; shoulders and neck blend smoothly into body. 6- <b>Moderately Fleishy:</b> May have slight crease down back; fat over ribs spongy; fat around tailhead soft; fat beginning to be deposited along the side of withers, behind shoulders, and along sides of neck. 7- <b>Fleishy:</b> May have slight crease down back; individual ribs can be felt, but noticeable filling between ribs with fat; fat around tailhead soft; fat deposited along withers, behind shoulders, and along neck. 8- <b>Fat:</b> Crease down back; difficult to feel ribs; fat around tailhead very soft; fat area along withers filled with fat, area behind shoulder filled with fat, noticeable thickening of neck; fat deposited along inner thighs. 9- <b>Extremely Fat:</b> Obvious crease down back; patchy fat appearing over ribs, bulging fat around tailhead; along withers, behind shoulders and along neck, fat along inner thighs may rub together; flank filled with fat.						
<b>Primary use of equine:</b> 1- Pleasure 2- Show or competition 3- Racing 4- Farm or ranch work 5- Breeding	 <p style="text-align: center;"><b>Body Condition Scoring</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; border-right: 1px solid black; padding: 5px;">A. Along the neck</td> <td style="width: 33%; border-right: 1px solid black; padding: 5px;">C. Crease down back</td> <td style="width: 33%; padding: 5px;">E. Ribs</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">B. Along the withers</td> <td style="border-right: 1px solid black; padding: 5px;">D. Tailhead</td> <td style="padding: 5px;">F. Behind the shoulder</td> </tr> </table>		A. Along the neck	C. Crease down back	E. Ribs	B. Along the withers	D. Tailhead	F. Behind the shoulder
A. Along the neck	C. Crease down back	E. Ribs						
B. Along the withers	D. Tailhead	F. Behind the shoulder						
<a href="http://horse.purinamills.com/nutrition/scoringchart.asp">http://horse.purinamills.com/nutrition/scoringchart.asp</a>	<a href="http://horse.purinamills.com/nutrition/scoringchart.asp">http://horse.purinamills.com/nutrition/scoringchart.asp</a>							

## Form C: EHM Index Case Questionnaire

This questionnaire pertains only to the EHM index case. General background information was collected on the index case on Form B, but this questionnaire will help identify potential EHM risk factors for the index case.

### Abbreviations for this questionnaire:

**EHV-1:** Equine herpesvirus-1

**EHM:** Equine herpesvirus myeloencephalopathy

**Y=Yes, N=No, D/K=Don't know, NA=Not applicable**

### Definitions for this questionnaire:

**Index case:** The first equid on the premises with neurological signs consistent with EHM and a positive biological test for EHV-1.

**Equid:** All species of equids such as donkeys, mules, ponies, horses, etc.

**Horses:** All full-size horse breeds (14 hands or more at withers) including foals on the premises. Does not include donkeys, mules, ponies, and miniatures.

**In the last 30 days prior to the onset of EHM:** Include the 30 days before the date that the equid presented with neurological signs of EHM.

The following questions pertain only to the equid identified as the **Index Case**:

Index Case Name or ID: \_\_\_\_\_

Today's Date \_\_\_/\_\_\_/\_\_\_

Date of onset of EHM: \_\_\_/\_\_\_/\_\_\_



b. Use the chart below to describe the medications administered to the equid in the last 30 days **prior** to the onset of EHM.

Medication type	List name of medication or NA if not applicable	Date of treatment onset	Treatment duration in days
Antivirals			___ days
NSAIDS			___ days
Corticosteroids			___ days
Antibiotics			___ days
Lasix/furosemide			___ days
Prerace jug			___ days
Joint injection			___ days
Dewormer			___ days
Vaccination(s)			___ days
Joint supplement(s)			___ days
Nutritional supplement(s)			___ days
Other (specify)			___ days

4 a. Has this equid received any type of medication **after** the EHM diagnosis?  
Y
N
D/K

**If “No” or “Don’t know,” skip to Question 5.**

b. Use the chart below to describe the medications administered to the equid **after** the EHM diagnosis.

Medication type	List name of medication or NA if not applicable	Date of treatment onset
Antivirals		
NSAIDS		
Corticosteroids		
Antibiotics		
Other (specify)		

5. Use the chart below to list the biological test(s) performed, the result(s) obtained, and the name of the testing laboratory responsible for processing the sample(s) for the index case.

Biological test	Check all that apply	Results: see code	Laboratory name
Nasal PCR			
Blood PCR			
*Serologic titers			
**Histopathology			
Virus isolation			
***CSF analysis			
Other (specify)			

\*Positive serologic titer is a 4X rise in titers 2–4 weeks apart with no history of vaccination during that time.

\*\* Abnormal histopathology results include vasculitis and/or thrombosis of CNS blood vessels.

\*\*\* Abnormal CSF analysis consistent with EHM is an increase in total protein/albumin without an increase in nucleated cell count and presence of xanthochromia.

**Result codes**

1=Positive/abnormal result

2=Negative result

3=Unknown

4=Suspect or inclusive results

6. Use the chart below to characterize the **current** clinical condition of the equid.

Clinical Status	Check the appropriate box
Complete recovery	
Partial recovery	
Stable condition	
Condition deteriorating	
Died (not euthanized)	
Euthanized	

**SECTION 2: EXPOSURE**

The following questions pertain to the index case’s exposure **prior to EHM diagnosis**.

1. Is the index case a **resident** of this premises?                      Y                      N                      D/K

2. Has the index case been **directly exposed** to **nonresident** equids the last 30 days?  
(Circle one.)

1–No

2–Yes, one nonresident exposure

3–Yes, more than one nonresident exposure

4–Don’t know

3. Has the index case been **indirectly exposed\*** to **nonresident** equids in the last 30 days? (Circle one.).

[\*Indirectly exposed, such as through shared equipment, shared transport, and/or personnel moving between horses.]

- 1–No
- 2–Yes, one nonresident exposure
- 3–Yes, more than one nonresident exposure
- 4–Don't know

4. Has the index case been directly or indirectly exposed to a mule or donkey in the last 30 days? Y                      N                      D/K

5. In the 30 days prior to the EHM diagnosis, approximately how many different people on a daily basis have had **direct exposure** to this equid (include stall cleaners, groomers, trainers, caretakers, veterinarians, farriers, etc.)? # \_\_\_\_\_ or D/K

### SECTION 3: BIOSECURITY

This section pertains to biosecurity practices that have taken place since EHV-1 was confirmed on the premises.

1. Has the index case been **isolated** from the other equids on the premises since EHM was diagnosed? If "Yes," list the date. Y date \_\_/\_\_/\_\_                      N                      D/K

2. If "Yes," has the index case been moved to a different housing area away from the healthy (nonsymptomatic) equids on the premises since EHM was diagnosed? If "Yes," list the date. Y date \_\_/\_\_/\_\_                      N                      D/K

### SECTION 4: NUTRITION

1. Which of the following is the **primary** grain/concentrate fed to this equid in the 30 days prior to EHM diagnosis? (Circle one.)

- 1–Not fed (for example, hay or turned-out only)
- 2–Unpelleted sweet feed, such as grain mixed with molasses
- 3–Unpelleted grain, such as whole or rolled oats and corn
- 4–Geriatric feed
- 5–Complete feed pellets or cubes, such as a forage/grain mixture
- 6–Grain mix with pellets
- 7–Other (specify: \_\_\_\_\_)

2. Which of the following is the **primary** dried forage fed to this equid in the 30 days prior to the EHM diagnosis? (Circle one.)

- 1–Not fed (for example, turned-out only)
- 2–Alfalfa
- 3–Grass hay
- 4–Grass and alfalfa mix hay
- 5–Other (specify: \_\_\_\_\_)

3. Does this equid typically receive dietary supplements (e.g., folic acid, Vitamin E)?

Y

N

D/K

If "Yes," please list the dietary supplement(s), the amount, and frequency of administration:

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## Form D: Questionnaire for Horses with Fever, Neurologic Signs, and Exposed to Index EHM Case at Initial Data Collection

This questionnaire pertains only to those equids that have been exposed to the index case and have developed a fever and/or neurologic signs in the last 30 days. Exposed equids are those that have shared airspace and/or had direct physical contact with the index case. General background information was collected on each case on Form B, but this questionnaire will help identify potential EHM risk factors for new cases of EHM after the exposure to the index case.

### Abbreviations for this questionnaire:

**EHV-1:** Equine herpesvirus-1

**EHM:** Equine herpesvirus myeloencephalopathy

**Y=Yes, N=No, D/K=Don't know, NA=Not applicable**

### Definitions for this questionnaire:

**Equid:** All species of equids such as donkeys, mules, ponies, horses, etc.

**Horse:** All full-size horse breeds (14 hands or more at withers) including foals on the premises. Does not include donkeys, mules, ponies, and miniatures.

**In the last 30 days:** Include the 30 days before the date of this interview.

**Resident equid:** Equids including foals that have spent or are expected to spend more time at this premises than at any other premises, even if not owned by the owner of the premises. In other words, this premises may be considered the animal's "home."

**Nonresident equid:** Not a resident equid as describe by the definition above.

**Direct exposure:** Physical contact.

**Indirect exposure:** Cared for by same personnel, shared equipment, or shared airspace.

**Index case:** The first equid on the premises with neurological signs consistent with EHM, no epidemiological link to another equid with EHM, and a positive biological test for EHV-1.

**Isolate:** To prevent nose-to-nose contact with other equids from this premises and the sharing of equipment, such as brushes, combs, and buckets between equids.

### The following questions pertain only to the equine case specified for this questionnaire:

Equid name or ID: \_\_\_\_\_

Today's date: \_\_\_\_/\_\_\_\_/\_\_\_\_



**SECTION 1: HEALTH**

This section relates to the clinical health and medical treatments of this equid **in the last 30 days**. To answer these, please refer to the equid’s medical records.

1. a. Has this equid had any of the following signs of EHV-1 disease (neurologic signs, fever, lethargy, decreased appetite, etc.) in the last 30 days?
- Y                      N                      D/K

**If “No” to neurologic signs, skip to Question 2.**

b. Use the chart below to characterize EHV-1 disease signs the equid exhibited within the last 30 days.

Clinical sign	Answer Y, N, D/K	Date of onset of clinical sign
*Neurologic signs		
Fever (>101.5°F)		
Nasal discharge or cough		
Abortion		
Lethargy		
Leg edema		
Decreased appetite		
Other (specify)		

c. Use the chart below to characterize the neurological signs this equid exhibited in the last 30 days.

Neurological signs	Check all that apply
Complete recumbency (cannot rise with assistance)	
Incomplete recumbency (can rise with assistance)	
Hind limb ataxia	
Front limb ataxia	
Toe dragging	
Paresis	
Head tilt	
Circling	
Bladder atony	
Reduced tail tone	
Reduced anal tone	
Other (specify)	

2. a. Has this equid received any medication in the last 30 days for the **treatment or prevention of EHV-1** Y N D/K

**If “No” or “Don’t know,” skip to Question 3.**

b. Use the chart below to list the medication(s) administered to the equid in the last 30 days for the treatment or prevention of EHV-1.

Medication type	List name of medication or NA if not applicable	Date of treatment onset	Treatment duration in days
Antivirals			_____ days
NSAIDS			_____ days
Corticosteroids			_____ days
Antibiotic			_____ days
Other (specify)			_____ days

3. a. Has this equid received medications in the last 30 days for reasons **other than treatment or prevention of EHV-1?** Y N D/K

**If “No” or “Don’t know,” skip to Question 4.**

b. Use the chart below to list the medication(s) administered to the equid in the last 30 days for reasons other than treatment or prevention of EHV-1.

Medication type	List name of medication or NA if not applicable	Date of treatment onset	Treatment duration in days
Antivirals			_____ days
NSAIDS			_____ days
Corticosteroids			_____ days
Antibiotic			_____ days
Lasix/furosemide			_____ days
Prerace jug			_____ days
Joint injection			_____ days
Dewormer			_____ days
Vaccination(s)			_____ days
Joint supplement(s)			_____ days
Nutritional supplement(s)			_____ days
Other (specify)			_____ days

4. a. Has any biological testing been performed on this equid to determine EHV-infectious status? Y N D/K

**If “No” or “Don’t know,” skip to Question 5.**



3. Has this equid been **indirectly exposed to nonresident** equids the last 30 days?  
(Circle one.)

- 1–No
- 2–Yes, one nonresident exposure
- 3–Yes, more than one nonresident exposure
- 4–Don't know

4. Has this equid been **directly or indirectly** exposed to a **mule or donkey** in the last 30 days?  
Y N D/K

5. Prior to the EHV-1 outbreak, approximately how many people on a daily basis had **direct exposure** to this equid (include stall cleaners, grooms, trainers, caretakers, veterinarians, farriers, etc.)?

# \_\_\_\_\_ or D/K

6. Has this equid had **direct exposure** to the **index case** in the last 30 days?  
Y N D/K

7. Has this equid had **indirect exposure** to the **index case** in the last 30 days?  
Y N D/K

### SECTION 3: BIOSECURITY

This section pertains to biosecurity practices that have taken place since EHV-1 was confirmed on the premises.

1. Has this equid been **isolated** from the other equids on the premises since EHV-1 was first confirmed on the premises? If "Yes," list the date.  
Y date \_\_/\_\_/\_\_ N D/K

### SECTION 4: NUTRITION

1. Which of the following was the **primary** grain/concentrate fed to this equid in the last 30 days?  
(Circle one.)

- 1–Not fed
- 2–Unpelleted sweet feed, such as grain mixed with molasses
- 3–Unpelleted grain, such as whole or rolled oats and corn
- 4–Geriatric feed
- 5–Complete feed pellets or cubes, such as a forage/grain mixture
- 6–Grain mix with pellets
- 7–Other (specify: \_\_\_\_\_)

2. Which of the following was the **primary** dried forage fed to this equid in previous 30 days?

- 1–Not fed
- 2–Alfalfa
- 3–Grass hay
- 4–Grass and alfalfa mix hay
- 5–Other (specify: \_\_\_\_\_)

3. Does this equid typically receive dietary supplements (e.g., folic acid, vitamin E)?

Y                      N                      D/K

If “Yes,” please list the dietary supplement(s), the amount, and frequency of administration.

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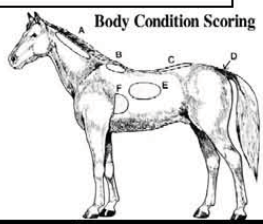
<b>Form E: Follow-Up Equine Index EHM Case and Likely Exposed* to EHM Index Case Chart</b> This Chart will provide basic descriptive information related to the index case as well as all equines likely exposed to EHM index case.				
<b>PREMISES NAME</b> _____		<b>TODAY'S DATE</b> /    /		
<i>Use the premises diagram and the codes on the accompanying page to answer the following questions:</i>				
<b>Equine Name or ID</b>				
<b>Location on premises:</b> Refer to premises diagram and enter assigned number	#	#	#	
<b>Age:</b> Enter months or years	___ mos <b>OR</b> ___ yrs	___ mos <b>OR</b> ___ yrs	___ mos <b>OR</b> ___ yrs	___ mos <b>OR</b> ___ yrs
<b>Gender:</b> Circle one. <b>If pregnant</b> list breeding date (see codes)	1 2 3 4 ___/___/___	1 2 3 4 ___/___/___	1 2 3 4 ___/___/___	1 2 3 4 ___/___/___
<b>Breed:</b> List code				
<b>** Fever</b> in the last 30 days: (temp. > 101.5F) Circle no or yes. <b>If yes</b> , list date of onset.	NO YES: Date ___/___/___	NO YES: Date ___/___/___	NO YES: Date ___/___/___	NO YES: Date ___/___/___
<b>** Neurological signs</b> in the last 30 days: Circle no or yes. <b>If yes</b> , select all codes that apply.	NO YES: _____	NO YES: _____	NO YES: _____	NO YES: _____
<b>Illness or injury</b> other than fever/neurological disease in last 30 days: Circle no or yes. <b>If yes</b> , select all codes that apply.	NO YES: _____	NO YES: _____	NO YES: _____	NO YES: _____
<b>Medications</b> in the last 30 days: Circle no or yes. <b>If yes</b> , select all codes that apply.	NO YES: _____	NO YES: _____	NO YES: _____	NO YES: _____
<b>Equine herpesvirus vaccination</b> in last 12 months: Circle no or yes. <b>If yes</b> , list most recent vaccination date, frequency/yr vaccinated, and product code (see codes).	NO YES: Date ___/___/___ Freq. ___ Code ___	NO YES: Date ___/___/___ Freq. ___ Code ___	NO YES: Date ___/___/___ Freq. ___ Code ___	NO YES: Date ___/___/___ Freq. ___ Code ___
<b>Contact with care providers</b> in the last 30 days: Circle no or yes for each	<b>Veterinarian:</b> NO YES <b>Farrier:</b> NO YES <b>Trainer:</b> NO YES	<b>Veterinarian:</b> NO YES <b>Farrier:</b> NO YES <b>Trainer:</b> NO YES	<b>Veterinarian:</b> NO YES <b>Farrier:</b> NO YES <b>Trainer:</b> NO YES	<b>Veterinarian:</b> NO YES <b>Farrier:</b> NO YES <b>Trainer:</b> NO YES
<b>Travel off the premises</b> in the last 30 days Circle no or yes. <b>If yes</b> , select code that applies.	NO YES: _____	NO YES: _____	NO YES: _____	NO YES: _____
<b>Body Condition Score</b> :Circle one. (see codes)	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9
<b>Exercise status:</b> Circle one. 1=competition, 2=training, 3=maintenance, 4=minimal exercise	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
<b>Primary use of equine:</b> Circle one. <b>If breeding female</b> list date of last live birth(see codes)	1 2 3 4 5 ___/___/___	1 2 3 4 5 ___/___/___	1 2 3 4 5 ___/___/___	1 2 3 4 5 ___/___/___
<b>FOR RACE HORSES ONLY:</b> <b>Use of Detention Barn</b> in last 30 days. Circle no or yes.	NO YES: Prerace exam YES: Post race drug Testing	NO YES: Prerace exam YES: Post race drug Testing	NO YES: Prerace exam YES: Post race drug testing	NO YES: Prerace exam YES: Post race drug testing
<b>FOR RACE HORSES ONLY:</b> Does the trainer of this horse have his/her own pony horse?	NO YES	NO YES	NO YES	NO YES
*Exposed equines are those who have shared airspace and/or had direct physical contact with the index case. **If there is a history of fever or neurologic disease since the start of the EHV-1 outbreak or if selected as a control, proceed to <b>Form F</b> .				



## Codes for Form E

<b>Gender:</b> 1- Intact male 2- Castrated male 3- Open female 4- Pregnant female, list breeding date	<b>Breed:</b> 1- Appaloosa 2- Arabian 3- Draft breed 4- Morgan 5- Mustang 6- Paint 7- Saddlebred 8- Standardbred 9- Tennessee Walker 10- Thoroughbred 11- Quarter horse 12- Warmblood breeds 13- Mule/Donkey 14- Pony 15- Miniature horse 16- Other registered breed (specify _____) 17- Other non-registered breed (specify _____)	<b>Neurological signs:</b> 1- Complete recumbency (cannot rise with assistance) 2- Incomplete recumbency (can rise with assistance) 3- Hind limb ataxia 4- Front limb ataxia 5- Toe Dragging 6- Paresis 7- Head tilt 8- Circling 9- Bladder atony 10- Reduced tail tone 11- Reduced anal tone 12- Other (specify)	<b>Injuries or Illnesses:</b> 1- Respiratory disease 2- Colic 3- Lameness (equines requiring intervention treatment such as corrective shoes or medication) 4- Laceration / wound 5- Ophthalmic disease 6- Other trauma 7- Aborted or delivered stillborn 8- Other (specify)	<b>Medications:</b> 1- NSAIDS 2- Corticosteroids 3- Antiviral drugs 4- Antibiotic drugs 5- Lasix/furosemide 6- Prerace jug 7- Joint injection 8- Other (specify)
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<b>Equine Herpes Vaccine:</b> 1- Fluvac Innovator 4/1- Fort Dodge 2- Fluvac Innovator 5 – Fort Dodge 3- Fluvac Innovator EHV 6- Fort Dodge 4- Pneumabort-K+1b- Fort Dodge 5- Equivac EHV1/4- Fort Dodge 6- Prestige w/ Havlogen- Intervet 7- Prestige II w/ Havlogen- Intervet 8- Prestige V w/ Havlogen- Intervet 9- Prestige V + VEE w/ Havlogen- Intervet 10- Prestige IV Foal Shot- Intervet 11- Prodigy w/ Havlogen- Intervet 12- Calvenza EHV- Boehringer Ingelheim 13- Calvenza EHV/EI- Boehringer Ingelheim 14- Rhinomune (EHV-1)- Prizer	<b>Travel:</b> 1- trip less than 5 hours total (round-trip or one-way) 2- trip more than 5 hours total (round-trip or one-way)	<b>Body condition scores: refer to picture on left</b> 1- <b>Poor:</b> Animal extremely emaciated; spinous processes, ribs, tailhead, tuber coxae (hip joints), and ischia (lower pelvic bones) projecting prominently; bone structure of withers, shoulders, and neck easily noticeable; no fatty tissue can be felt. 2- <b>Very Thin:</b> Animal emaciated; slight fat covering over base of spinous processes, transverse processes of lumbar vertebrae feel rounded; spinous processes, ribs, tailhead, tuber coxae (hip joints) and ischia (lower pelvic bones) prominent; withers, shoulders, and neck structure faintly discernable. 3- <b>Thin:</b> Fat buildup about halfway on spinous processes; transverse processes cannot be felt; slight fat cover over ribs; spinous processes and ribs easily discernable; tailhead prominent, but individual vertebrae cannot be identified visually; tuber coxae (hip joints), appear rounded but easily discernable; tuber ischia (lower pelvic bones) not distinguishable; withers, shoulders and neck accentuated. 4- <b>Moderately Thin:</b> Slight ridge along back; faint outline of ribs discernible; tailhead prominence depends on conformation, fat can be felt around it; tuber coxae (hip joints) not discernable; withers, shoulders and neck not obviously thin. 5- <b>Moderate:</b> Back is flat (no crease or ridge); ribs not visually distinguishable but easily felt; fat around tailhead beginning to feel spongy; withers appear rounded over spinous processes; shoulders and neck blend smoothly into body. 6- <b>Moderately Fleishy:</b> May have slight crease down back; fat over ribs spongy; fat around tailhead soft; fat beginning to be deposited along the side of withers, behind shoulders, and along sides of neck. 7- <b>Fleshy:</b> May have slight crease down back; individual ribs can be felt, but noticeable filling between ribs with fat; fat around tailhead soft; fat deposited along withers, behind shoulders, and along neck. 8- <b>Fat:</b> Crease down back; difficult to feel ribs, fat around tailhead very soft; fat area along withers filled with fat, area behind shoulder filled with fat, noticeable thickening of neck; fat deposited along inner thighs. 9- <b>Extremely Fat:</b> Obvious crease down back; patchy fat appearing over ribs, bulging fat around tailhead; along withers, behind shoulders and along neck, fat along inner thighs may rub together; flank filled with fat.
<b>Primary use of equine:</b> 1- Pleasure 2- Show or competition 3- Racing 4- Farm or ranch work 5- Breeding		



**Body Condition Scoring**

A. Along the neck	C. Crease down back	E. Ribs
B. Along the withers	D. Tailhead	F. Behind the shoulder

<http://horse.purinamills.com/nutrition/scoringchart.asp>

<http://horse.purinamills.com/nutrition/scoringchart.asp>

## Form F: Followup Questionnaire for the Index Case, Subsequent EHV Cases, and Controls

This questionnaire is to be filled out for the index case, subsequent cases/potential subsequent cases, and randomly selected controls at the end of the EHV-1 outbreak (28 days after the last EHV-1 case is diagnosed). The subsequent cases and potential subsequent cases are all equids that have been exposed to the index case and have developed a fever and/or neurologic signs since the start of the EHV-1 outbreak. There should be three controls per case, which should be randomly selected at the end of the outbreak. General background information was collected on each equid on Form B, but this questionnaire will help identify potential EHM risk factors for the index case and for other equids exposed to the index case.

### Abbreviations for this questionnaire:

**EHV-1:** Equine herpesvirus-1

**EHM:** Equine herpesvirus myeloencephalopathy

**Y=Yes, N=No, D/K=Don't know, NA=Not applicable**

### Definitions for this questionnaire:

**Equid:** All species of equids such as donkeys, mules, ponies, horses, etc.

**Exposed equids:** Those that have shared airspace and/or had direct physical contact with the index case.

**Horses:** All full-size horse breeds (14 hands or more at withers) including foals on the premises. Does not include donkeys, mules, ponies, and miniatures.

**In the last 30 days prior to the onset of EHM:** Include the 30 days before the date that the equid presented with neurological signs of EHM.

**Randomly selected controls:** Equids that have been exposed to the index case, but have not developed a fever and/or neurologic signs.

### The following questions pertain only to the equid previously specified for this questionnaire:

Equid name or ID: \_\_\_\_\_

Today's date: \_\_\_/\_\_\_/\_\_\_

Indicate status of this equid (circle one):

Index case

Subsequent EHV case in this outbreak

Control

This questionnaire relates to the clinical health and medical treatments of this equid. To answer these, please refer to the equid's medical records.

1. Was this equine diagnosed with **EHV-1** infection?

Y

N

D/K

If "No," skip to Question 6.



2. Was this equid diagnosed with **EHM**?

Y                      N                      D/K

3. a. Has this equid shown any signs of EHV-1 disease (neuropathy, fever, lethargy, decreased appetite, etc.) in the last 30 days?

Y                      N                      D/K

**If “No” or “Don’t know,” skip to Question 6.**

b. Use the chart below to characterize the clinical signs of EHV-1 observed in the equid.

Clinical sign	Answer Y/N	Date of onset of clinical signs
Fever (>101.5°F)		
Respiratory disease		
Neurologic disease		
Abortion		
Lethargy		
Leg edema		
Other (specify)		

**If “No” to fever, skip to Question 5.**

4. a. How many days did the elevated body temperature last on the equid? (Circle one.)

- 1–2 days
- 3–4 days
- 5–6 days
- ≥7 days

b. What was the date the of the peak body temperature?    /    /

5. a. Did this equid have any neurological signs since the start of the EHV-1 outbreak?  
(can refer to 3b.) Y N D/K

**If “No” or “Don’t know,” skip to Question 7.**

- b. Use the chart below to characterize the neurological signs observed in this equid.

Neurological signs	Check all that apply
Complete recumbency (cannot rise with assistance)	
Incomplete recumbency (can rise with assistance)	
Hind limb ataxia	
Front limb ataxia	
Toe Dragging	
Paresis	
Head tilt	
Circling	
Bladder atony	
Reduced tail tone	
Reduced anal tone	
Other (specify)	

6. a. Has this equid received any medication since the date of the first questionnaire for **treatment or prevention of EHV-1**? Y N D/K

**If “No” or “Don’t know,” skip to Question 7.**

- b. Use the chart below to list the medication(s) administered to the equid for the **treatment or prevention of EHV-1** since the date of the first questionnaire.

Medication type	List name of medication or NA if not applicable	Date of treatment onset
Antivirals		
NSAIDS		
Corticosteroids		
Antibiotic		
Other (specify)		

7. a. Has the equid received any medication since the date of the first questionnaire for reasons **other than the treatment of EHV-1**? Y N D/K

**If “No” or “Don’t know,” skip to Question 8.**

b. Use the chart below to describe any type of medication the equiD has received since the date of the first questionnaire **other than the treatment or preventions or EHV-1.**

Medication type	List name of medication or NA if not applicable	Date of initial treatment	Treatment duration in days
Antivirals			___ days
NSAIDS			___ days
Corticosteroids			___ days
Antibiotic			___ days
Lasix/furosemide			___ days
Prerace jug			___ days
Joint injection			___ days
Dewormer			___ days
Vaccination(s)			___ days
Joint supplement(s)			___ days
Nutritional supplement(s)			___ days
Other (specify)			___ days

8. a. Has this equiD had any biological test to determine EHV-infectious status?  
Y
N
D/K

**If “No” or “Don’t know,” skip to Question 9.**

b. Use the chart below to list the biological test(s) performed, the results obtained, and the name of the testing laboratory responsible for processing the sample(s) to diagnose EHM in the equid.

Biological Test	Check all that apply	Results: see code	Laboratory name
Nasal PCR			
Blood PCR			
*Serologic titers			
**Histopathology			
Virus isolation			
***CSF analysis			
Other (specify)			

\* Positive serologic titer is a 4X rise in titers 2–4 weeks apart with no history of vaccination during that time.  
 \*\* Abnormal histopathology results include vasculitis and/or thrombosis of CNS blood vessels.  
 \*\*\*Abnormal CSF analysis consistent with EHM is an increase in total protein/albumin without an increase in nucleated cell count and presence of xanthochromia.

**Result codes**

- 1=Positive result/abnormal
- 2=Negative result
- 3=Unknown
- 4=Suspect or inconclusive results

9. What was the medical outcome of this equid?

<b>Clinical outcome</b>	<b>Check the appropriate row</b>	<b>Date of outcome</b>
No signs of EHV-1 throughout outbreak		
Complete recovery		
Improved but not completely recovered		
Died (not euthanized)		
Euthanized		
Outcome other than those listed (specify)		