



International
Collating Centre

INTERNATIONAL COLLATING CENTRE
Information Exchange on Infectious Equine Disease
Generously supported by contributions from
International Thoroughbred Breeders Federation members
E: equinesurveillance@gmail.com



First Quarter Summary Report: January – March 2021

This article provides a summary of international disease outbreaks during first quarter 2021. It should also be noted that additional summary reports were kindly received that included further information on disease occurrence for that country but which had not been reported in previous real-time ICC reports. This additional information is identified by * or # in the tables and text where relevant throughout this report. The information from the ICC interim (real-time) reports are available on the interactive ICC website, which can be found at <http://jdata.co.za/iccviewer/>.

The data presented in this report *must be interpreted with caution*, as there is likely to be some bias in the way that samples are submitted for laboratory testing and subsequently reported. Consequently these data do not necessarily reflect true infectious disease frequency within the international equine population. A country with no reported outbreaks of a disease does not necessarily equate to the disease not being present in that country. Each table below summarises the number of disease outbreaks reported by a country. Each reported outbreak may involve more than one animal.

Reproductive Conditions

Country	CEM	EHV-1	EHV-1 & -4	EHV-3	EHV-4	Lepto-spirosis	Nocar-diosis	Salmo-nella	S. zoo
Belgium	-	6 [#]	1	-	5 [#]	-	-	-	3
Canada	-	2	-	-	-	-	-	-	-
France	-	3	-	2	2	-	-	-	-
Germany	2	11	-	-	-	-	-	-	-
Ireland	-	7	-	-	-	-	-	-	-
Japan	-	#	-	-	-	-	-	#	-
Netherlands	-	3	-	-	-	-	-	-	-
Sweden	-	6 [#]	-	-	-	-	-	-	-
UK	-	8 [#]	-	-	-	-	-	-	-
USA	-	1	-*	-	-	*	*	-	-

**relates to additional summary information reported at the end of the quarter, but which was not reported via ICC interim reports*
#reported after the quarter end

Contagious Equine Metritis (CEM)

Germany



Two outbreaks of CEM were reported with single cases in each on premises in the federal state of Rhine-Platz and the federal state of Bavaria. Positive diagnoses were confirmed on genital swabs.

Equine Herpes Virus-1 (EHV-1) Abortion

Belgium



Six outbreaks of EHV-1 abortion with single cases in each were reported. Four of the animals were unvaccinated. Positive diagnoses were confirmed by PCR on lung and liver tissue. #Three outbreaks of EHV-1 abortion with single cases in each were reported after the quarter end. Positive diagnoses were confirmed by PCR on lung and liver tissue.

Canada



Two outbreaks of EHV-1 abortion in Thoroughbreds with single cases in each were reported on separate premises in Ontario. Abortion occurred in the tenth month of gestation in one case and the foal was stillborn in the other.

France



Three outbreaks of EHV-1 abortion with single cases in each were reported - including one in a French Trotter and one in a Hanoverian. Positive diagnoses were confirmed by PCR on fetal tissues in two of the cases.

Germany



Eleven outbreaks of EHV-1 abortion with two cases in two outbreaks and single cases in nine outbreaks were reported. In one case the foal was stillborn. Positive diagnoses were confirmed, in the majority, by PCR on genital swabs and fetal tissue.

Ireland



Seven outbreaks of EHV-1 abortion with single cases in each were reported – all were in Thoroughbreds. Positive diagnoses were confirmed by gross pathology, histopathology and PCR.

Japan



#Ten cases of EHV-1 abortion in Thoroughbreds on eight premises were reported during the third quarter, after the quarter end. Seven of the animals were vaccinated. Positive diagnoses were confirmed by PCR.

Netherlands



Three outbreaks of EHV-1 abortion with three cases in one outbreak and single cases in two outbreaks were reported. Positive diagnoses were confirmed by PCR on vaginal and nasopharyngeal swabs and lung aspirate.

Sweden



Six outbreaks of EHV-1 abortion with single cases in each were reported. Positive diagnoses were confirmed by pooled samples from fetal organs (spleen, liver and lung) and placenta. #Two further outbreaks of EHV-1 abortion in Swedish Warmblood mares with a single case in each were reported after the quarter end on premises in Uppsala and Hjo.

UK



Eight outbreaks of EHV-1 abortion with single cases in each were reported on premises in Denbighshire, Midlothian, Norfolk, Northumberland, Suffolk, West Sussex and Yorkshire. Positive diagnoses were made based on gross post-mortem findings and PCR and histopathology on fetal tissue. #One further case of EHV-1 abortion in a vaccinated 12-year-old Warmblood mare was reported after the quarter end.

USA



One case of EHV-1 abortion was reported in a vaccinated eight-year-old Quarter Horse mare on a premises in Oklahoma. The mare had no previous clinical signs.

Equine Herpes Virus-1 & -4 (EHV-1 &-4) Abortion

Belgium



One case of EHV-1 and EHV-4 abortion was reported in a vaccinated mare on a premises in Hainaut. Abortion took place at nine months gestation. Positive diagnosis was confirmed by PCR on lung and liver tissue.

USA



*There were nine additional cases of EHV-1 and or EHV-4 abortion, all in Kentucky reported after the quarter end.

Equine Herpes Virus-3 (EHV-3) Coital Exanthema

France



Two outbreaks of EHV-3 coital exanthema with single cases in each were reported – one in a Thoroughbred on premises in Loire Atlantique and Ille et Vilaine. Positive diagnoses were confirmed by PCR on genital swabs.

Equine Herpes Virus-4 (EHV-4) Abortion

Belgium



Five outbreaks of EHV-4 abortion with single cases in each were reported – one case had a co-infection of *Streptococcus zooepidemicus*. Positive diagnoses were confirmed by PCR on lung and liver tissue. #One case of EHV-4 abortion in a vaccinated animal was reported after the quarter end on a premises in East Flanders. Positive diagnosis was confirmed by PCR on lung and liver tissue.

France



Two outbreaks of EHV-4 abortion with single cases in each were reported on premises in Finistère and Loire. Positive diagnoses were confirmed by PCR on nasopharyngeal swab and blood and fetal material.

Leptospirosis

USA



*Four cases of leptospiral abortion were recorded in Kentucky after the quarter end.

Nocardiosis

USA



*A total of eight cases of mucoid, nocardioform placentitis/abortion were confirmed in Kentucky in the first quarter of 2021 and reported after the quarter end.

Salmonella abortus equi

Japan



#One case of *Salmonella abortus equi* in a non-Thoroughbred was reported during first quarter 2021, after the quarter end. Positive diagnosis was confirmed by serology and agent isolation.

Streptococcus zooepidemicus Abortion

Belgium



Three outbreaks of *Streptococcus zooepidemicus* abortion with single cases in each were reported. Two of the mares aborted at nine months gestation. Positive diagnoses were confirmed by PCR on lung and liver tissue.

Respiratory Conditions

Country	EHV-1	EHV-1 & 4	EHV-1 & Flu	EHV-2	EHV-4	EHV-2/-5	EHV-5	Flu	Strangles
Belgium	8 [#]	1	-	1	6 [#]	-	1	-	1
Canada	-	-	-	-	-	-	-	-	2
France	20	-	-	-	53	-	-	8	13
Germany	12	-	-	1	-	-	-	5	-
Italy	[#]	-	-	-	-	-	-	-	-
Netherlands	-	-	-	-	2	-	-	3	19
Qatar	1	-	-	-	-	-	-	-	-
Spain	2	-	-	-	-	-	-	-	-
Sweden	12	-	-	-	-	-	-	-	-
Switzerland	1	-	-	-	1	-	-	-	5
UK	5 [#]	-	-	-	-	-	-	5	-
USA	3	-	1	-	2	*	-	4*	27

**relates to additional summary information reported at the end of the quarter, but which was not reported via ICC interim reports
[#]reported after the quarter end*

Equine Herpes Virus-1 (EHV-1) Respiratory Infection

Belgium



Eight outbreaks of EHV-1 respiratory infection were reported with one outbreak with two cases and seven outbreaks with single cases. Six of the outbreaks reported that they had recently returned from competing at events in Spain. Positive diagnoses were confirmed by PCR on nasal swabs and blood. [#]One case of EHV-1 respiratory infection was reported after the quarter end in a vaccinated animal on a premises in East Flanders. Positive diagnosis was confirmed by PCR on a nasal swab.

France



Twenty outbreaks of EHV-1 respiratory infection were reported with one outbreak with six cases, two outbreaks with five cases, two outbreaks with four cases, one outbreak with three cases, three outbreaks with two cases and 11 outbreaks with single cases. Three of the single cases had a co-infection with EHV-4. Five of the outbreaks had recently returned from competing at events in Spain.

Germany



Twelve outbreaks of EHV-1 respiratory infection were reported with one outbreak with four cases, one outbreak with three cases and 10 outbreaks with single cases. One case reported that they had recently returned from competing at an event in Spain. Positive diagnoses were confirmed by PCR on nasal swabs.

Italy



[#]A case of EHV-1 respiratory infection was reported on a premises in Valsamoggia, Emilia Romagna after the quarter end.

Qatar



One case of EHV-1 respiratory infection was reported. Two horses had attended CES Valencia Showjumping Tour and one tested positive by PCR on a nasopharyngeal swab. Tests carried out on the second horse were inconclusive.

Spain



The FEI twice reported on outbreaks of EHV-1 respiratory disease in horses at or recently attending several FEI-affiliated showjumping events held in Spain. Other outbreaks of

EHV-1 respiratory infection reported in other countries in this report also had links to these events.

Sweden



Twelve outbreaks of EHV-1 respiratory infection were reported – one with two cases and nine with single cases of which two had a co-infection of *Streptococcus zooepidemicus*. The two further outbreaks were asymptomatic animals tested on their return from competing at events in Spain of which six animals tested positive in one outbreak and two in another. Clinical signs include pyrexia, cough and nasal discharge. Positive diagnoses were confirmed by PCR on nasal swabs.

Switzerland



One case of EHV-1 respiratory infection was reported in the Canton of Vaud. The animal had recently returned from competing at an event in Spain.

UK



Five outbreaks of EHV-1 respiratory infection were reported – all single cases in unvaccinated non-Thoroughbreds. Positive diagnoses were confirmed by PCR on nasopharyngeal swabs

USA



Three outbreaks of EHV-1 respiratory infection were reported – one with seven cases and two with single cases on premises in Massachusetts, Pennsylvania and Tennessee. Clinical signs include pyrexia.

Equine Herpes Virus-1 & -4 (EHV-1 & -4) Respiratory Infection

Belgium



One case of EHV-1 and -4 respiratory co-infection with additional co-infection of EHV-5 was reported. Clinical signs include pyrexia. Positive diagnosis was confirmed by PCR on a nasal swab.

Equine Herpes Virus-1 (EHV-1) Respiratory Infection/Equine Influenza (EI)

USA



One case of EHV-1 respiratory infection with a co-infection of EI was reported on a premises in Washington.

Equine Herpes Virus-2 (EHV-2) Respiratory Infection

Belgium



One case of EHV-2 respiratory infection was reported on a premises in Flemish Brabant. Clinical signs include pyrexia, nasal discharge and cough. Positive diagnosis was confirmed by PCR on a nasal swab.

Germany



One case of EHV-2 respiratory infection was reported on a premises in the federal state of Mecklenburg-Vorpommern. Clinical signs include pyrexia. Positive diagnosis was confirmed by PCR on a nasopharyngeal swab.

Equine Herpes Virus-2/-5 (EHV-2/-5) Respiratory Infection

USA



*Cases of EHV-2 and/or EHV-5 were confirmed in a number of states, some associated with clinical evidence of respiratory disease were reported after the quarter end.

Equine Herpes Virus-4 (EHV-4) Respiratory Infection

Belgium



Six outbreaks of EHV-4 respiratory infection were reported – one outbreak with multiple cases and five with single cases. One outbreak had a co-infection with EHV-2 and EHV-5 and three outbreaks had co-infection with EHV-2. Clinical signs include pyrexia, lymphadenopathy, nasal discharge and cough. #One case of EHV-4 respiratory infection with co-infection with EHV-2 and EHV-5 was reported after the quarter end. Clinical signs include pyrexia.

France



Fifty-three outbreaks of EHV-4 respiratory infection were reported – one outbreak with 25 cases, one outbreak with six cases, one outbreak with four cases, four outbreaks with three cases, 10 outbreaks with two cases and 36 single cases. Clinical signs include lymphadenopathy, cough, nasal discharge and pyrexia. Positive diagnoses were confirmed by PCR on nasopharyngeal swabs.

Netherlands



Two outbreaks of EHV-4 respiratory infection were reported with single cases in each. Clinical signs include lymphadenopathy, nasal discharge and pyrexia. Positive diagnoses were confirmed by PCR on nasopharyngeal swabs

Switzerland



One case of EHV-4 respiratory infection was reported in Zurich. Clinical signs include pyrexia. Positive diagnosis was confirmed by PCR on a nasal swab.

USA



Two outbreaks of EHV-4 respiratory infection were reported with single cases in each on premises in Florida and Tennessee. Clinical signs include pyrexia, mild anorexia and bilateral mucopurulent nasal discharge. One of the animals was vaccinated.

Equine Herpes Virus-5 (EHV-5) Respiratory Infection

Belgium



One case of EHV-5 respiratory infection was reported on a premises in Limburg. Clinical signs include cough, lymphadenopathy and pyrexia. Positive diagnosis was confirmed by PCR on nasal swabs.

Equine Influenza (EI)

France



Eight outbreaks of EI were reported with five cases in one outbreak, two cases in two outbreaks and single cases in five outbreaks. Clinical signs include cough, nasal discharge and pyrexia. Positive diagnoses were confirmed by PCR on nasopharyngeal swabs.

Germany



Five outbreaks of EI were confirmed with seven cases in one outbreak, two cases in two outbreaks and single cases in three outbreaks – all on premises in the federal state of Schleswig-Holstein. Clinical signs include cough, nasal discharge and pyrexia.

Netherlands



Three outbreaks of EI were confirmed with a single case in each. Clinical signs include cough, enlarged submandibular lymph nodes, nasal discharge and pyrexia. Positive diagnoses were confirmed by PCR on nasopharyngeal swabs.

UK



Five outbreaks of EI were confirmed with two cases in one outbreak and single cases in four outbreaks. Clinical signs include cough, inappetence, lethargy, lymphadenopathy and pyrexia. Positive diagnoses were confirmed by PCR on nasopharyngeal swabs. #One further case of EI in a stallion recently imported from Spain to a premises in Staffordshire was reported after the quarter end.

USA



Four outbreaks of EI were confirmed with two cases in one outbreak and single cases in two outbreaks on premises in Oregon, Virginia and Washington. Clinical signs include cough, mild nasal discharge and pyrexia. A case of EHV-1 with a co-infection of EI on a premises in Washington was also reported and is referenced under this section earlier in the report. *Equine influenza is endemic in the USA. The disease was confirmed in at least 13 states, with multiple outbreaks recorded in some states and was reported after the quarter end.

Strangles

Belgium



One outbreak of strangles with a single case was reported in an unvaccinated animal on a premises in Limburg. There were no clinical signs. The animal had recently been imported from Spain.

Canada



Two outbreaks of strangles with single cases in each in Standardbred horses were reported on premises in Prince Edward Island and Ontario.

France



Thirteen outbreaks of strangles were reported with one outbreak with three cases and 12 outbreaks with single cases. Clinical signs include cough, nasal discharge, pyrexia and lymphadenopathy. Positive diagnoses were confirmed by PCR on nasopharyngeal swabs in 11 outbreaks and by PCR on guttural pouch lavage in two outbreaks.

Netherlands



Nineteen outbreaks of strangles were reported with single cases in each. Clinical signs include pyrexia, nasal discharge, enlarged submandibular lymph nodes, cough and abscessation. Positive diagnoses were confirmed by PCR on nasopharyngeal swabs.

Switzerland



Five outbreaks of strangles were reported with single cases in three outbreaks and more than one case in two outbreaks. Four of the five outbreaks were in the Canton of Aargau and one in the Canton of Zurich. Clinical signs include pyrexia, respiratory signs and swollen submandibular lymph nodes. Positive diagnoses were by PCR on pus, nasal swabs or nasopharyngeal swabs.

USA



Twenty-seven outbreaks of strangles were reported with single cases in 26 outbreaks and two cases in one outbreak in premises in Michigan, Florida, Washington, Massachusetts, Pennsylvania and California. Clinical signs include pyrexia, nasal discharge, swollen lymph nodes and lethargy. *Strangles is endemic in the USA. The disease was recorded in at least nine states, with multiple outbreaks in five states and reported after the quarter end.

Gastrointestinal Diseases

Country	Clostridial Enterocolitis	Coronavirus	Rotavirus	Lawsonia Enteropathy	Salmonellosis
France	-	-	2	-	-
Switzerland	-	4	-	-	-
USA	*	-	*	*	*

*relates to additional summary information reported at the end of the quarter, but which was not reported via ICC interim reports
#reported after the quarter end

Clostridial Enterocolitis

USA



*Eight cases of *Clostridium perfringens*, Type A, beta-2 toxin, and 99 cases of *C. perfringens*, toxin untyped, were diagnosed by PCR, the majority in Kentucky. Additionally, 63 cases of *Clostridioides difficile* were confirmed on PCR testing, many in Kentucky after the quarter end.

Equine Coronavirus (ECoV)

Switzerland



Four outbreaks of ECoV were reported with single cases in three outbreaks and more than one case in one outbreak. Clinical signs include diarrhoea, pyrexia, anorexia and mild colic. Positive diagnoses were confirmed by PCR on fecal matter.

Rotavirus

France



Two outbreaks of rotavirus were reported with single cases in each on separate premises in Calvados. Positive diagnoses were confirmed by PCR on a rectal swab or faecal matter.

USA



*Numerous outbreaks of diarrhoea in neonatal foals were reported in Kentucky, some of which were infected with a novel Rotavirus type, not previously recorded in the foal were recorded after the quarter end.

Lawsonia Enteropathy

USA



*Two cases of *Lawsonia intracellularis* infection were recorded in Kentucky after the quarter end.

Salmonellosis

USA



*Two cases of *Salmonella* species, Group B, were diagnosed in Kentucky after the quarter end

Neurological Conditions

Country	EEE	EEV	EHV-1	EHV-4	Rabies	WNV
Belgium	-	-	8	-	-	-
Canada	-	-	7	-	-	-
France	-	-	5	1	-	-
Germany	-	-	2	1	-	1
Italy	-	-	1 [#]	-	-	-

Netherlands	-	-	2	-	-	-
Spain	-	-	2	-	-	-
South Africa	-	#	-	-	-	#
Switzerland	-	-	1	-	-	-
USA	1	-	14*	-	1	-

**relates to additional summary information reported at the end of the quarter, but which was not reported via ICC interim reports
#reported after the quarter end*

Eastern Equine Encephalitis (EEE)

USA



One case of EEE was reported in an unvaccinated Quarter Horse in Florida. Clinical signs include inability to stand, incoordination and weakness in hind-limbs. The animal was euthanased.

Equine Encephalosis Virus

South Africa



#Equine Encephalosis Virus (EEV) is regarded as endemic in South Africa and cases were reported from eight of the nine provinces of South Africa during the first quarter 2021 as follows – Eastern Cape (one case), Gauteng (70 cases), KwaZulu Natal (12 cases), Mpumalanga (nine cases), Northern Cape (three cases), North West Province (one case), Western Cape (three cases) and Limpopo (one case) after the quarter end.

Equine Herpes Virus-1 (EHV-1) Neurological Disease

Belgium



Eight outbreaks of EHV-1 neurological disease were reported with single cases in five outbreaks, four cases in one outbreak, eight cases in one outbreak and 24 cases in one outbreak. Clinical signs include acute pressure ulcers, ataxia, bladder paralysis, cough, penile prolapse and pyrexia. Positive diagnoses were confirmed by PCR on blood and/or nasal swabs. Four of the outbreaks related to an event in Valencia, Spain.

Canada



Seven outbreaks of EHV-1 neurological disease were reported with single cases in six outbreaks and two cases in one outbreak. Clinical signs include ataxia, difficulty urinating and defecating, down with inability to rise, incoordination of hind limbs, pyrexia and recumbency. Six of the outbreaks were on premises in Ontario and one on a premises in Quebec.

France



Five outbreaks of EHV-1 neurological disease were reported with single cases in three outbreaks, four cases in one outbreak and five cases in one outbreak. Clinical signs include ataxia, depression, paresis and pyrexia. Positive diagnoses were confirmed by PCR on nasopharyngeal swabs. Two of the outbreaks related to an event in Valencia, Spain.

Germany



Two outbreaks of EHV-1 neurological disease were reported in 16-year-old and 21-year-old mares on separate premises in North Rhine-Westfalia. Clinical signs include ataxia. Positive diagnoses were confirmed by PCR on nasopharyngeal swabs.

Italy



The Italian representative for FEEVA reported four separate EHV-1 neurological disease cases in four separate premises in northern Italy. Clinical signs included mild ataxia. Two of the cases had returned from competing at an event in Valencia, Spain. #One further case of EHV-1 neurological disease was reported after the quarter end on a premises in Mozzate, Lombardia.

Netherlands



Two outbreaks of EHV-1 neurological disease were reported, one outbreak with a single case and one outbreak with two cases in unvaccinated animals on premises in Gelderland. Clinical signs include distension of the bladder, hind limb paralysis, hypotonia of the tail, pyrexia and recumbency. Positive diagnoses were confirmed by PCR on nasopharyngeal swabs and EDTA blood.

Spain



The FEI twice reported on outbreaks of EHV-1 neurological disease in horses at or recently attending several FEI-affiliated showjumping events held in Spain. Other outbreaks of EHV-1 neurological disease reported in other countries in this report also had links to these events.

Switzerland



One case of EHV-1 neurological disease was reported on a premises in the Canton of Zug. Clinical signs include pyrexia. Positive diagnosis was confirmed by PCR on a nasal swab. This case had recently returned from competing at an event in Valencia, Spain.

USA



Fourteen outbreaks of EHV-1 neurological disease were reported, 11 involving single cases, two outbreaks with two cases and one outbreak with four cases. Clinical signs include hindlimb, forelimb ataxia, recumbency, pyrexia, recumbency, urinary incontinence and urine and faeces retention. Three of the animals were euthanased. #One case of EHV-1 neurological disease was reported after the quarter end in a Quarter Horse on a premises in Parker County, Texas.

Equine Herpes Virus-4 (EHV-4) Neurological Disease

France



One case of EHV-4 neurological disease was reported on a premises in Seine Maritime. Clinical signs include ataxia. Positive diagnosis was confirmed by PCR on a nasopharyngeal swab.

Germany



One case of EHV-4 neurological disease was reported in a six-year-mare on a premises in the federal state of Schleswig-Holstein. Positive diagnosis was confirmed by PCR on a nasopharyngeal swab.

Rabies

USA



One case of rabies was reported in an unvaccinated seven-year-old mule on a premises in California. Clinical signs include ataxia, cranial nerve deficit, inability to stand and pyrexia. The animal was euthanased.

West Nile Virus (WNV)

Germany



One case of WNV was reported on a premises in Germany.

South Africa



#Two cases of WNV were reported from the Free State and Kwa-Zulu Natal during first quarter 2021.

Miscellaneous Conditions

Country	AHS	EIA	Lepto	Pigeon Fever	Piroplasmosis	Tyzzer's Disease
Canada	-	2	-	-	-	-
France	-	-	1	-	-	-
Romania	-	2	-	-	-	-
South Africa	#	-	-	-	#	-
USA	-	5	-	1	-	*

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African Horse Sickness

South Africa



#AHS is endemic in South Africa except in the AHS controlled area in the Western Cape Province. AHS cases have occurred sporadically within the endemic area of South Africa, in six of the nine Provinces (Gauteng, Free State, Kwa-Zulu Natal, Limpopo, Mpumalanga and North West), totalling 38 cases. There were no cases of AHS in the Western Cape Province, either in the infected part of the province or in the AHS controlled area.

Equine Infectious Anaemia (EIA)

Canada



Two outbreaks of EIA were reported with one outbreak with one case and one outbreak with seven cases on premises in Alberta and Saskatchewan. The outbreak with seven cases in Alberta was on the premises of an animal rescue organisation.

Romania



Two outbreaks of EIA were reported with single cases in each on premises in Romania.

USA



Five outbreaks of EIA were reported with single cases in each outbreak on premises in California, Oregon, Texas and Utah.

Leptospirosis

France



One case of leptospirosis was reported in a French Saddle stallion on a premises in Eure et Loire. Positive diagnosis was confirmed by PCR on blood.

Pigeon Fever

USA



One case of pigeon fever was reported in King County, Washington.

Piroplasmosis

South Africa



#Piroplasmosis is regarded as endemic in South Africa and cases were reported from eight of the nine provinces of South Africa during first quarter 2021 as follows – Eastern Cape (one case), Gauteng (68 cases), Kwa-Zulu Natal (14 cases), Mpumalanga (10 cases), Northern Cape (two cases), North West Province (one case), Western Cape (six cases) and Limpopo (one case).

Tyzzler's Disease

USA



*Cases of *Clostridium piliforme* infection were diagnosed, four in Kentucky and a further case in a foal in Maryland after the quarter end.