FINAL REPORT

MEETING ON FOOT-AND-MOUTH DISEASE DIFFERENTIAL DIAGNOSES AND THE SIVCONT - CONTINENTAL EPIDEMIOLOGICAL SURVEILLANCE SYSTEM

Pursuant to *Resolution IV COSALFA 45*

PANAFTOSA-PAHO/WHO – Brazil | October 15 – 17, 2018

OPENING

Dr Ottorino Cosivi, PANAFTOSA's director, opened the meeting, kindly welcomed the participants, and restated the cooperation commitment for the eradication of foot-and mouth disease as well as the relevance of this event. The background and objectives of the Meeting were afterward presented by Dr. Manuel Sanchez Vazquez and Dr. Alejandro Rivera.

This technical meeting was conceived within the framework of the 45th Ordinary Meeting of the South American Commission for the Fight against Foot-and Mouth Disease (COSALFA), where the COSALFA countries approved Resolution IV on foot-and-mouth disease differential diagnoses and the Continental Epidemiological Surveillance System (SivCont) (Annex I). The objectives of the Meeting are as follows:

1. To review and identify relevant foot-and mouth disease differential diagnoses, as well as to provide a clear definition for them;
2. To define the role of the SivCont for the exchange and dissemination of data and information concerning the occurrence of foot-and mouth disease and its differential diagnoses; and
3. To establish the information and an updated format for the elaboration of the report to the COSALFA.

PARTICIPANTS

Eleven professionals from 11 COSALFA member countries - Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Peru, Paraguay, Panama, Uruguay and Venezuela - participated in the Meeting, technically coordinated by PANAFTOSA technicians Dr. Manuel Sanchez Vazquez, Dr. Alejandro Rivera, Ms. Lia Puppim Buzanovsky, Mr. Alexandre Guerra and Dr. Maristela Pituco. Annex II - List of participants.

After the approval of the Agenda (Annex III), the Meeting was started.

SCHEDULE OF THE MEETING

MONDAY - October 15 2018 | Foot-and-mouth disease differential diagnoses

The meeting was opened by Dr. Sanchez, who presented data on several differential diagnoses reported by the countries in the last COSALFA 45. Inconsistencies in both the number of notifications in each country and the differential diagnoses encountered became evident at this point.

Afterward, each county explained its reporting and notification structure as well as how and when reports are made to the central system and the suspicion of vesicular disease is recorded in the system. As a result, two essential methods of recording notifications of vesicular disease were observed: i) some countries record all notifications as a suspicion of vesicular disease in their information system from the time of notification, that is, the suspicion of vesicular disease is recorded before the official veterinary service (OVS) visit; ii) in contrast, in other countries the suspicion of vesicular disease is only recorded after the OVS's field visit and once the presence of clinical and pathological evidence of the disease has been confirmed, which was termed well-founded suspicion. That is, whether it is a differential diagnosis of foot-and mouth disease or not is decided on the field.

Then, the discussion was about immediate differential diagnoses, that is, those considered a vesicular disease. All countries consider vesicular stomatitis in the suspicion protocols. Additionally, only Brazil includes also the Seneca Valley virus (in the case of swine disease) in laboratory diagnosis, and Colombia is considering its inclusion.

Other viral differential diagnoses discussed were contagious ecthyma (CE) and poxviruses (cowpox and seudocowpox viruses), which are regarded as differential diagnoses that can be ruled out during the OVS visit by their clinical and pathological presentation and, in the case of poxvirus, also by the occurrence of signs in humans (e.g. lesions on milker's hands). Regarding bacterial diseases, it was also agreed that Actinobacilosis (wooden tongue) and foot rot (infectious pododermatitis) can be ruled out on the field by their clinical and pathological presentation. Infectious bovine rhinotracheitis (IBR) and bovine viral diarrhea (BVD) are considered highly prevalent endemic diseases in the region, having rarely a vesicular presentation. Thus, in most cases, BVD and IBR should not be considered as routine differential diagnoses, unless their clinical presentation is consistent with vesicular disease. A similar situation was considered for bluetongue (BT) disease. As regards lesions caused by chemicals and trauma, including photosensitivity and oral lacerations produced by certain forage, it was concluded that they could be ruled out based on the clinical and pathological presentation on field. Finally, some recommendations at laboratory level were also discussed.

Additionally, it was agreed that the epidemiologic situation, the regional risk, the background information of the facilities regarding the presence of other differential diagnoses, as well as the vaccination status, should also be taken into account. In the case of a population where vaccination is applied, suspicion should rely only on the presence of a vesicular lesion in at least one animal. On the other hand, in populations where vaccination is not practiced, morbidity is expected to affect more than one animal.

The importance of complying with protocols for suspected cases was highlighted since they can be particularly useful in cases where field veterinarians are not appropriately skilled in this type of diseases.

Conclusions on foot-and mouth disease differential diagnoses

- Regarding notification, raising the awareness of producers, private veterinarians and other reporting agents was considered essential.
- Well-founded suspicions (after visiting the facilities) are those helpful for comparing the attention associated with passive surveillance among countries in a more standardized way. Nevertheless, both the number of informed suspicions and those ruled out should be recorded as an indication of passive surveillance.

- Well-founded suspicions should always be investigated by taking samples for laboratory testing.
- In the presence of suspected vesicular disease, foot-and mouth disease should always be ruled out together with vesicular stomatitis. It is advisable to include the Seneca Valley virus as well, in the case of suspected disease in swine.
- In most cases, viral diseases such as CE and Poxvirus, bacterial diseases such as actinobacillosis and foot rot, as well as those caused by chemical or traumatic lesions, can be ruled out by their clinical and pathological presentation.
- BVD, IBR and BT are rarely considered differential diagnoses of vesicular disease.
- It is advisable to include PCR in differential diagnosis protocols.
- The field form is an essential document when sending samples to the laboratory.

TUESDAY - October 16, 2018 | Role of the SivCont for data exchange and dissemination

This session started with a brief presentation by PANAFTOSA on the history of the Continental Epidemiological Surveillance System (SivCont), the first information system developed by PANAFTOSA to collect, store, analyze and share data on the syndromic surveillance of animal diseases at regional level. Thus, the objectives of system creation and the history of its use by the South American countries were introduced. The following presentation enlightened on the new SivCont, which was redesigned in 2018. The technical details of the new system were explained, from its operation to the new data input and output interface. Particularly, this mode of information dissemination enables, through interactive panels including maps and charts, that reported occurrences be presented in the same way as in the "Weekly Epidemiological Reports to PANAFTOSA" (as of 2017).

It was also explained that two components can be observed in the SivCont: i) the national one is the health information system that internally collects, processes and uses information; and the other, ii) is a regional component devoted to add and share information at this level. At present, only Brazil and Colombia use the SivCont's national component and then share their surveillance information at regional level.

After these presentations, the current need of a Regional system to share information on FMD suspected cases and surveillance was discussed, as well as the future of the SivCont as a Regional information system and the interest of COSALFA member countries in using this system. The general view is that the SivCont is still regarded as a helpful tool to share information on vesicular diseases at regional level although, in general, the countries are not open to exchange information on suspected cases until they have been confirmed or ruled out by laboratory analysis. Regarding duplication of efforts and overlapping of information submitted to the OIE, it was emphasized that the information gathered in the SivCont regarding the occurrence of vesicular stomatitis does not imply duplication since it is no longer shared at international level through the OIE World Animal Health Information Database (WAHID) as from 2014. Additionally, information on endemic diseases reported to the OIE only every six months could also be gathered by the SivCont in a more real-time fashion.

Another necessary improvement to facilitate the reporting of information from the countries is the need to develop a tool to upload data easily, for instance, through a pro forma table or template. The countries insisted on the importance of making the process simpler in order to avoid task overload in veterinary services. This is also important for countries such as Colombia and Brazil since they will not need to report to the SivCont national component to share information at regional level.

Among the necessary improvements for the SivCont, the possibility of including a module to gather information on active surveillance sampling (e.g. design, geographical area, outcome) was deemed positive. Furthermore, it will be possible to state the number of animals in the affected area in case of suspected cases. As noted earlier,

it is necessary to add a system to upload data automatically so that countries can upload the information minimizing additional efforts. Once this tool is implemented, the "Weekly Epidemiological Reports to PANAFTOSA" will no longer be published since the information uploaded by the countries in the SivCont will be seen in the interactive reports of the system, thus avoiding the publication of duplicate reports. It was also requested that the comments (texts) made in notifications can be included in the visualization, since they can provide relevant information on epidemiological research.

Regarding the SivCont next steps, it was concluded that:

- In order to share information at regional level it is suggested to first enable the upload tool in the SivCont.
- It is advisable to start sharing information on vesicular diseases, reporting both those confirmed as negative or positive, as well as the absence of suspected cases (i.e. epidemiological silence should be also communicated). Likewise, and in order to remain consistent, it was agreed that the weekly epidemiological reports currently published should only focus on vesicular diseases because, once the upload tool is enabled, they will be discontinued to allow the dissemination of information only through the SivCont.
- The essential information to be included comprises: other differential diagnoses, estimated date of onset of event, date of notification to the services, date of visit, date of confirmation or ruling out, number of susceptible animals present, number of affected animals, information on the location of premises at second administrative level and a field for comments.
- A weekly report should be prepared, closing on Sundays. Thus, the country should upload information until Wednesdays to be published by PANAFTOSA on Thursdays. Therefore, information will be published almost in real time (with a 1-week lag time).
- In the future, when the SivCont is fed by all countries, PANAFTOSA will implement epidemiological indicators automatically calculated by the system.

WEDNESDAY – October 17, 2018 | Information to elaborate the report to the COSALFA

This session was started by PANAFTOSA presenting a Report on the Situation of the Programs for the Eradication of Foot-and Mouth Disease in COSALFA Countries. It was explained that this is a product of COSALFA's Secretariat based on the information sent by the countries and supported by the historical work made by PANAFTOSA. During the COSALFA, this is an active working tool, but it is also a public technical document including comprehensive information not only on the foot-and-mouth disease situation in the Region but also on the structure of Veterinary Services.

Regarding report structure, it was explained that country information includes the following sections: free territories (those recognized, those in the process of being recognized or planned); the program; surveillance structure and information systems; the work done on passive surveillance and notifications; the work done on active surveillance and sampling; vaccination programs; training programs and dissemination; activities at international and transboundary level; prevention and quarantine policy; actions in emergency situations, and national contingency plan. It was also agreed to incorporate a session on diagnostic capacity.

Lastly, quantitative information requested to the countries was reviewed during the meeting, template by template, to assess the need, usefulness, and relevance of requesting this information or not, as well as the necessary level of breakdown within the country (national level versus second administrative level). The conclusions of these discussions are presented in the new forms (Annex IV).

ANNEX I

COSALFA

45th ORDINARY MEETING OF THE SOUTH AMERICAN COMMISSION FORT HE FIGHT AGAINST FOOT-AND-MOUTH DISEASE

Santa Cruz de la Sierra - Bolivia | 19 - 20 April 2018

RESOLUTION IV

Information about the differential diagnoses of Foot-and-Mouth Disease

The 45th Ordinary Meeting of the COSALFA

Considering:

- The Region is advancing towards the eradication of foot-and-mouth disease, with an increase of disease-free zones with or without vaccination, thus attaining an epidemiological situation characterized by the absence of virus;
- The importance of a good strategy to attend suspected cases, where it is essential to clearly identify the differential diagnoses of foot-and-mouth disease;
- The SivCont - Continental Epidemiological Surveillance System - enables disease reporting at regional level, which contributes to show surveillance transparency and reliability;
- The need to update the format and the information gathered in the situation report of national programs submitted at the COSALFA.

Resolves:

1. PANAFTOSA-PAHO/WHO should convene and coordinate a technical meeting with experts of the countries so that, in the present epidemiological context, they:
   - Review and identify the relevant differential diagnoses of foot-and-mouth disease, providing a clear definition about them;
   - Define the role of the SivCont for the exchange and dissemination of data and information regarding the emergence of foot-and-mouth disease and its differential diagnoses; and
   - Define the information and an updated format for the elaboration of the report to the COSALFA.

(Approved in the plenary session
of 20 April 2018)

Resoultions submitted at the COSALFA 45 – Santa Cruz de la Sierra - Bolivia | 20 April 2018

ANNEX II

PANAFTOSA
Centro Panamericano de Fiebre Aftosa
Salud Pública Veterinaria

OPS OMS

REUNIÓN SOBRE DIAGNÓSTICOS DIFERENCIALES DE FIEBRE AFTOSA Y EL SISTEMA DE VIGILANCIA EPIDEMIOLÓGICA CONTINENTAL (SIVCONT)

PANAFTOSA - Rio de Janeiro, Brasil – 15 al 17 de octubre del 2018

Lista de Asistencia - Fecha: 15 de octubre

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ANNEX III

MONDAY - October 15, 2018 | Role of the SivCont for data exchange and dissemination		
09:00-09:30	Welcome from PANAFTOSA-PAHO/WHO director Introduction of participants Approval of the agenda	All
09:30-10:00	Presentation of the background of the SivCont and its use (countries, diseases) Introduction of the new SivCont and its potentialities	PANAFTOSA-PAHO/WHO
10:00-10:40	Role of the other global systems OIE WAHIS/D and FAO EMPRES-i	Moderator: PANAFTOSA-PAHO/WHO Participants: All
10:40-11:00	*Coffee break*	
11:00-12:15	Need for a Regional system to share regional information on FMD suspected cases and surveillance The role of the SivCont as a Regional information system for FMD suspected cases and surveillance	Moderator: PANAFTOSA-PAHO/WHO Participants: All
12:15-13:15	*Lunch*	
13:15-14:45	Conclusions on the future of the SivCont as a Regional information system for FMD suspected cases and surveillance Potential technical (information system) and management improvements to be considered for the future	Moderator: PANAFTOSA-PAHO/WHO Participants: All
14:45-15:00	*Coffee break*	
15:00-16:00	Presentation of the discussion on the SIRVERA	Moderator: PANAFTOSA-PAHO/WHO Participants: All

TUESDAY - October 16 2018 | Foot-and mouth disease differential diagnoses		
09:00-9:30	Presentation of most recent FMD data and differential diagnoses	PANAFTOSA-PAHO/WHO
9:30-10:00	Process of passive surveillance, reporting and notification	Moderator: PANAFTOSA-PAHO/WHO Participants: All
10:00-10:40	Laboratory component for differential diagnoses	Moderator: PANAFTOSA-PAHO/WHO Participants: All
10:40-11:00	*Coffee break*	
11:00-12:15	Clinical and epidemiological manifestations of FMD (with or without vaccination) Review of differential diagnoses considered so far by the countries and at regional level	Moderator: PANAFTOSA-PAHO/WHO Participants: All
12:15-13:15	*Lunch*	
13:15-14:45	Definition of the desired concept of FMD differential diagnosis Identification of relevant FMD differential diagnoses to be used at Regional level	Moderator: PANAFTOSA-PAHO/WHO Participants: All
14:45-15:00	*Coffee break*	
15:00-16:00	Finding a clear definition of case of the same differential diagnoses	Moderator: PANAFTOSA-PAHO/WHO Participants: All

WEDNESDAY – October 17 2018 | Information for the elaboration of the report to the COSALFA		
09:00-9:30	Presentation of the information currently collected for the COSALFA and its use (information forwarded by the country versus information used)	PANAFTOSA-PAHO/WHO
9:30-10:40	Breakdown and consolidation of current information presented by topic, for discussion (I) • Rank according to potential and actual usefulness. • Decide on the information that should continue to be requested • Gather suggestions on the new information to be added.	Moderator: PANAFTOSA-PAHO/WHO Participants: All
10:40-11:00	*Coffee break*	
11:00-12:15	Breakdown and consolidation of current information presented by topic, for discussion (II) • Rank according to potential and actual usefulness. • Decide on the information that should continue to be requested • Gather suggestions on the new information to be added.	Moderator: PANAFTOSA-PAHO/WHO Participants: All
12:15-13:15	*Lunch*	
13:15-14:45	Support alternatives for data capture	Moderator: PANAFTOSA-PAHO/WHO Participants: All
14:45-15:00	*Coffee break*	
15:00-16:00	Possible analyses to submit data in the COSALFAs and its usefulness Identification of other collaborators (e.g., country workforce, universities, etc.) to increase data analysis capacity	Moderator: PANAFTOSA-PAHO/WHO Participants: All

ANNEX IV

CHART 1: Coverage of the National Program for Foot-and Mouth Disease by first subnational administrative level

COUNTRY				YEAR	
First subnational administrative level	ADM_COD	Total of Country			No. of Local Units of Veterinary Care
		Surface in Km^2	No. of herds with bov./bub.	No. of bov./bub.	
Total of the country		0	0	0	0

CHART 2: Number of livestock, other species of economic importance by first subnational administrative level

	Country				Year			
First subnational administrative level	ADM_COD	Number of heads							
		Bovines/bubalines*		Caprine	Ovine	Swine	Camelid	Equine	Other Equidae
		< 1 year	> 1 year						
Total of the country		0	0	0	0	0	0	0	0

CHART 3: Main characteristics according to country zoning (recognized as FMD free)

	Country				Year	
Detail		Foot-and mouth disease free zone de (Rec. OIE)		Buffer zone (With vaccination)	Zone not declared as foot-and mouth disease-free	
		Without Vaccination	With Vaccination		Without Vaccination	With Vaccination
Surface in Km^2						
No. of herds with bov/bub						
No. of bov/bub	< 1 year					
	> 1 year					
	Total	0	0	0	0	0
No. local units of veterinary care						
Vehicles	Single track					
	Double track					
	Motorcycles					
No. of Local Units of Veterinary Care						
Ships						
Human Resources	Field veterinarians					
	Field auxiliaries					

CHART 4: Number of facilities* with notification of well-founded suspected cases consistent with vesicular diseases, according to the diagnosis by first subnational administrative level

	Country:											Year:			
First subnational administrative level	ADM_COD	Number of facilities													
		With notification of well-founded suspected cases consistent with vesicular diseases	With positive diagnosis for vesicular diseases									Negative for FMD	Negative for Vesic. Stom	Negative for SENECA
			Laboratory diagnosis						Clinical Epidemiological Diagnosis						
			O	A	C	NJ	IND	SENECA	FMD	Vesic. Stom.	SENECA			
Total of the country		0	0	0	0	0	0	0	0	0	0	0	0	0	0

CHART 5: Monthly distribution of facilities *with notification of well-founded suspected cases consistent with vesicular diseases

	Country:					Year:							
Number of facilities			Months										Total of the year
			JA	FE	MA	AP	MY	JN	JL	AG	SE	OC	NO	DE	
With notification of suspected cases consistent with Vesicular diseases			0	0	0	0	0	0	0	0	0	0	0	0	0
Positive for vesicular diseases	Laboratory diagnosis	O													0
		A													0
		C													0
		NJ													0
		IND													0
		SENECA													0
	Clinical Epidemiological Diagnosis	FMD													0
		Vesic. Stom.													0
		SENECA													0
Negative for FMD															0
Negative for Vesicular Stom.															0
Negative for SENECA															0

CHART 6: Number of facilities * with notification of clinical symptoms consistent with vesicular diseases with suspected cases ruled out and/or positive for other diseases easily confused according to clinical or laboratory diagnosis by first subnational administrative level

	Country:			Year:		
First subnational administrative level.		Number of facilities with diagnosis of				
		Bovine viral Diarrhea	Blue Tongue	Infectious bovine rhinotracheitis	Contagious Ecthyma	Poxvirus	Foot rot	Other	
								Include name	Include name
Total of the country		0	0	0	0	0	0	0	0

* regardless of animal species

CHART 7: Existing population, number of diseased and dead by species in the facilities* with clinical epidemiological or laboratory diagnosis positive for foot-and mouth disease

	Country:		Year:	
Species with clinical epidemiological or laboratory diagnosis positive for foot-and mouth disease.	In facilities with positive diagnosis for foot-and mouth disease			
	Existing population	Diseased	Dead	Slaughter
Bovine/Bubaline				
Ovine				
Swine				
Caprine				
Equine				
Camelid				

CHART 8: Systematic and strategic foot-and mouth disease vaccination according to species by first subnational administrative level

	Country:			Year:		
First subnational administrative level.	ADM_COD	Systematic Vaccination	Strategic Vaccination			
		Bovine/Bubaline	Animal species vaccinated			
			Number of heads vaccinated yearly			
			Bov./Bub.	Ovine	Caprine	Swine
Total of the country		0	0	0	0	0

CHART 9: Production and control of vaccines against foot-and mouth disease

	Country		Year	
	Valence of oily vaccines			
	Monovalent	Bivalent	Trivalent	Tetravalent
Strains for vaccine production	O1 Campos	O1 Campos and A24	O1 Campos, A24 and C3 Indaial	O1 Campo, A24, A2001 and C3 Indaial
Produced in the country in (year)				
Imported by the country in (year)				
Total (produced and imported)	**0**	**0**	**0**	**0**
Approved by quality control in the country in (year)				
Exported or donated to other countries in (year)				

CHART 10: Human resources of the national program for the fight to eradicate foot-and mouth disease

Country:				Year:			
	Professionals				Auxiliaries			
	Field	Offices	Laboratory	Total	Field	Offices	Laboratory	Total
Total of the country								

CHART 11: FINANCIAL RESOURCES *(U$S thousands) according to origin, used by the program for the fight to eradicate foot-and mouth disease

Country:			Year:		
Item	Description of Expenses*	Public Sector (US$ thousands)			Private Sector (US$ thousands)		
		Level		Total	Level		Total
		Central	Regional		Central	Regional	
Physical Infrastructure and supplies							0.00
	Equipment			0.00			0.00
	Facilities			0.00			0.00
	Vaccines			0.00			0.00
	Other supplies			0.00			0.00
	Subtotal	0.00	0.00	0.00	0.00	0.00	0.00
Plant personnel	Salaries			0.00			0.00
	Per diem			0.00			0.00
	Subtotal	0.00	0.00	0.00	0.00	0.00	0.00
Operation and maintenance	Fuel			0.00			0.00
	Repair and maintenance of vehicles			0.00			0.00
	Maintenance of physical infrastructure			0.00			0.00
	Sanitary barriers			0.00			0.00
	Communications			0.00			0.00
	Vaccinators (Temporary staff)			0.00			0.00
	Emergency			0.00			0.00
	Slaughter			0.00			0.00
	Consumer goods			0.00			0.00
	Other expenses			0.00			0.00
	Other expenses			0.00			0.00
	Subtotal	0.00	0.00	0.00	0.00	0.00	0.00
Total General		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

* Specify the expenses by purchased good or item.