

## DISCLAIMER

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## Self-declaration of the recovery of country freedom from Infection with *Burkholderia mallei* (glanders) by the State of Kuwait.

**Declaration sent to the OIE on 21 September 2020 by Dr Ali Al Qattan, OIE Delegate and Deputy Director General for Animal Wealth, Public Authority of Agriculture Affairs and Fish Resources.**

### I. Introduction

The aim of this self-declaration is to regain freedom from infection with *B. mallei* (glanders) status in equids in accordance with the *OIE Terrestrial Code*, Chapter 12.10., and article 12.10.3. The self-declaration is pertaining to the whole country and describes about the outbreak of infection with *B. mallei* (glanders) in equids, which was reported to the OIE through the World Animal Health Information System (WAHIS) on 31 July 2019.

The organization and activities of the Veterinary Services of Kuwait are described in Annex 1.

### II. History of the absence or eradication of the disease in the country

Infection with *Burkholderia mallei* (*B. mallei*) glanders reported in equids in the State of Kuwait in 2009 and 2010. With effective implementation of active and targeted surveillance in equids in 2010, infection with *B. mallei* was eradicated, and Kuwait sent the request to the OIE for the publication of a self-declaration of the regained free status in March 2012. After the publication of the self-declaration, Kuwait resumed exportations of horses to the trading partner countries. For maintaining the freedom from infection with *B. mallei*, surveillance strategies had continued, blood samples were collected at regular interval tested serologically by Complement Fixation test (CFT) in the national veterinary laboratory. Kuwait have not detected any case of glanders since March 2010, thus maintaining its free status.

However, an infection with *B. mallei* in horses of an equine farm, **in Wafra Al Ahmadi governorate** was confirmed by CFT at the national laboratory on 14 July 2019. The disease was also confirmed by the OIE Reference laboratory for glanders, in the United Arab Emirates (UAE), on 28 July 2019. Measures to eliminate infection were conducted and the outbreak was resolved on 17 September 2019<sup>1</sup>.

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<sup>1</sup> [WAHIS Report Ref. 35766.](#)

### III. Disease control measures in response to *B. mallei* infection (glanders) outbreaks

As pre-export sanitary requirements, five horses were isolated for export purpose, blood samples were taken and tested in the national laboratory and OIE Reference laboratory, Dubai, UAE for testing of equine diseases. As a result, two horses turned positive for *B. mallei* infection by Complement Fixation Test (CFT). The affected equine farm of 44 horses, was immediately brought under veterinary authority control, quarantine and movement restrictions in the infected farm, the neighboring stables and about 3-kilometer radius from the affected farm were enforced by law. Epidemiological investigation was carried out by the Epidemiology and Zoonosis unit of the Animal Health Department of the Public Authority for Agriculture Affairs and Fish Resources (PAAF). Investigations were conducted by tracing back and forward of positive cases: and on the possible source of the outbreak.

Movement controls were maintained outside the 3 kms area, all horses tested with negative results by CFT prior to movement.

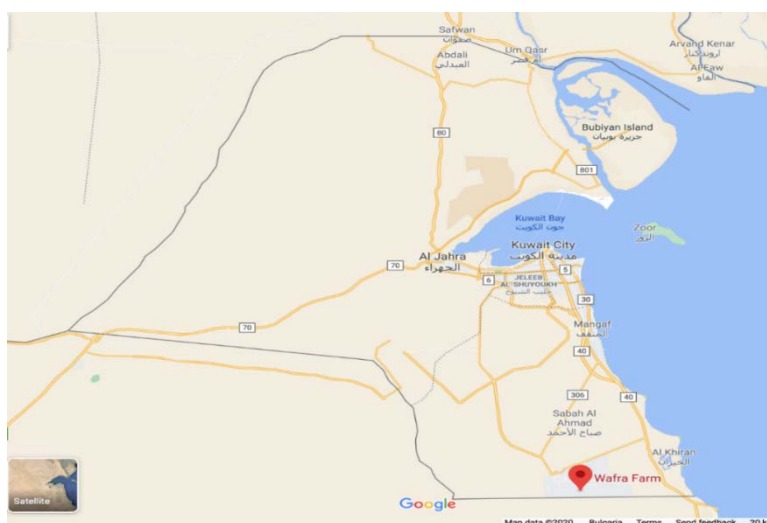
The affected equine farm was initially visited at weekly interval for clinical examination and serological surveillance to demonstrate absence of disease. After three CFT tests with negative results, both clinical and serological surveillance were carried out at a 3-week interval afterwards.

As for the farms located at a 3-kilometer radius from the affected equine farm, both clinical and serological surveillance was carried out at a 3-week interval, and the farms were monitored through passive surveillance. In other areas of the country: clinically and serological surveillance was carried out.

Blood samples were collected for all 44 horses kept in the affected equine farm, 44 samples were processed and tested by CFT in the National Veterinary Laboratory of Kuwait. Two horses resulted positive for infection with *B. mallei*. These positive samples were sent to the OIE Reference laboratory for glanders in Dubai (UAE), where they were reconfirmed as positive through the CFT test. During the periodic monitoring surveillance in the affected farm, one additional horse tested positive through CFT in the National Veterinary Laboratory of Kuwait. The three horses did not exhibit any clinical signs of glanders, and were euthanized, one horse on 25 July 2019 and two others on 30 July 2019. Post-mortem examinations were conducted in all three horses. With reference to the post-mortem findings: no skin lesions were detected in the examined horses, the nasal cavity and the nasal turbinate appeared congested. The retropharyngeal lymph node was enlarged to the size of 6 cm diameter and on incision contained thick pus. Trachea, lungs, and bronchial lymph nodes were apparently normal except for a mild congestion.

Samples were collected for the identification of *B. mallei*. PCR and culture tests conducted at the OIE Reference laboratory in France (ANSES Maisons-Alfort) with positive results. The carcasses were buried deeply in dry soil with disinfection procedures. Affected equine farm (premises) were cleansed and disinfected with an appropriate disinfectant on 30 July 2019. These three cases were immediately reported to the OIE through WAHIS on 31 July 2019.

### Map: outbreak location: equine farm, Wafra farm, Al Ahmadi Governorate



#### 3.1 Surveillance during the outbreak

According to the surveillance programme implemented, a plan was established to retest contact horses in the *B. mallei* infected equine farm with a 3 weeks interval for three times with negative results. The affected farm was visited at a three week interval for serological and clinical examination, during retesting, three horses confirmed to be positive by CFT for *B. mallei* infection in the national laboratory and in the OIE Reference laboratory for glanders, Dubai UAE on 8 September 2019. These were cases reported in the follow up reports to OIE. These three horses did not exhibit any clinical signs of glanders; however, they were humanly euthanized on 17 September 2019. Post-mortem examinations were conducted on all three horses, with similar findings as for the necropsies of the 3 horses conducted in July 2019. Samples were collected for *B. mallei* infection identification with positive results to PCR. Carcasses were buried deeply in dry soil with disinfection procedures. Affected equine farm (premises) was cleansed and disinfected. Bedding and faecal materials were incinerated, housing premises, utensils, and transporting vehicle are thoroughly cleaned then disinfected on 17 September 2019. Contact horses in the premises were kept under movement restrictions. They were clinically and serologically tested for *B. mallei* infection. The outbreak was considered as resolved on 17 September 2019 (Table 1).

#### 3.2. Epidemiological investigation for traceability:

##### Investigation of Source

Of six *B. mallei* infected horses, first three horses were confirmed on 20 and 24 July 2019 and other three horses on 8 September 2019. One was imported in 2015 from a country that has not reported a case of glanders to the OIE in more than 50 years. Moreover, this horse had been tested upon arrival to Kuwait with negative results for glanders, also prior to outbreak the horse was periodically tested against glanders according to the ongoing surveillance (surveillance continued after regaining free status since 11 March 2012). This horse was sold out locally one year before outbreak; about 10 contact horses were identified in the stable and the ten horses were tested by CFT with negative results.

It is worth noting that all horses imported to Kuwait follows the recommendations of article 12.10.4 of the OIE *Terrestrial Code* in regard to sanitary requirements. The imported horse tested negative to CFT in the country of origin prior to export to Kuwait and also in Kuwait, as all imported horses on arrival to Kuwait are tested by CFT in the national laboratory and allowed to enter the country if they have negative results.

Other five horses were born and reared in the farm and did not move outside from the farm. These horses were periodically tested against glanders by the above-mentioned surveillance program.

The outbreak was confirmed in July 2019 and no horse(s) entered the equine farm during the six-month period (from February to July 2019) before outbreak (incubation period of glanders according to the OIE *Terrestrial Code* Article 12.10.1).

### Investigation of Spread

Horses that were moved out of the equine farm during the six-month period (from February to July 2019) before the outbreak were traced out. One horse was moved out of the equine farm (sold locally), so this was the only one horse traced out and tested by CFT with negative results.

### Conclusions of the epidemiological investigation

According to the surveillance carried out, no other premises in the whole country detected any case(s) of *B. mallei* infection. Therefore, the source of infection is not yet clearly determined.

Trace-back and trace-forward investigation was carried out according to the OIE *Terrestrial Code* to determine the likely source of infection. However, no link could be established for equids belonging to other areas within the country for the source of infection. No new infections were detected in other premises. Still, the source of infection is unclear or unknown.

In addition, blood samples (proved negative in the national laboratory during repeated testing) collected from the contact horses in the *B. mallei* affected farm were double tested in the OIE Reference laboratory for Glanders (Friedrich Loeffler Institut), Germany with negative results to complement fixation test (CFT).

Surveillance investigations were conducted according to the Article 12.10.8. of the OIE *Terrestrial Code* to demonstrate absence of infection with *B. mallei* and to recover the country freedom. The surveillance carried out involved the complete horse population of the country (including imported horses). All horses were tested serologically using CFT kits with a sensitivity of 98% and a specificity of 96%. Only six horses confirmed positive for *B.mallei* infection in only one equine farm. After killing and disposal of the last 3 cases, and repeated tests 8 times at a 3 week interval, no additional case was reported in the affected equine farm, and in the whole country, as described in section IV of this self-declaration.

**Table 1: *B. mallei* infection: outbreak details:  
Equine farm, Wafra farms area, Wafra Al Ahmadi governorate**

| Susceptible animals | Positive cases/Microchips | Date of examination   | Date of Humane Killing | Date of disinfection of the farm premises |
|---------------------|---------------------------|-----------------------|------------------------|---|
| 44 horses           | 985101045172760           | 20-7-2019             | 25-7-2019              | 25-7-2019                                 |
|                     | 965000000359859           | 20-7-2019 & 24-7-2019 | 30-7-2019              | 30-7-2019                                 |
|                     | 941000018296736           | 20-7-2019 & 24-7-2019 | 30-7-2019              | 30-7-2019                                 |
|                     | 900155000178117           | 8-9-2019              | 17-9-2019              | 17-9-2019                                 |
|                     | 982000363581817           | 8-9-2019              | 17-9-2019              | 17-9-2019                                 |
|                     | 682000100006804           | 8-9-2019              | 17-9-2019              | 17-9-2019                                 |

## IV. Surveillance program and early detection system

### Surveillance strategies:

Surveillance strategies (active and targeted) implemented to demonstrate absence of *B. mallei* infection in equids and regain freedom from infection with *B. mallei* are in accordance with the OIE *Terrestrial Code* Chapter 1.4 (Animal Health surveillance) and relevant Chapter for *B. mallei* infection

12.10, article 12.10.8 – 12.10.9, (Surveillance for glanders), and article 12.10.3 (For recovery of free status).

Animal Health Department and National laboratory has been involved in the surveillance program and diagnosis for *B. mallei* infection, respectively.

The following surveillance strategies were implemented by the Epidemiology and zoonosis unit of the Animal Health Department (AH):

Active (clinical & serological) surveillance for *B. mallei* infected equine farm, in Wafra, and around 3-kilometer radius from the infected farm was conducted. Passive surveillance in equids, control of importation of horses, and control of movement of horses was carried out by the public veterinarians from the epidemiology and zoonosis unit, AH.

Active (clinical & serological) surveillance in equids in other areas (whole country) was carried out by the Private Veterinarians (Contract Company) under the supervisions and guidelines of epidemiology and zoonosis unit, AH.

Pathological surveillance, postmortem examinations were carried out in humanly killed animals or dead horses by a Public veterinarian (pathologist) working in the national laboratory. Samples were collected and sent to the OIE Reference laboratory in France (Anses Maisons-Alfort).

Surveillance field data, laboratory data analysis and management are carried out by the epidemiology and zoonosis unit, AH.

**Equine population:** Equine population census was determined by verifying the identifications (valid passport, microchip) with owner/stable details. About 7106 horses, mainly Arabian and English horses reared for breeding and for racing and competition, including 20 ponies, kept in 459 stables across the country were examined. More detailed information is included in table 2.

#### **Active surveillance (clinical & serological) in the *B. mallei* infected equine farm, in Wafra:**

Active clinical and serological surveillance was carried out around 3 kilometre radius of *B.mallei* infected equine farm, in Wafra. From about 94 horses identified in seven stables, no animals exhibited clinical signs of glanders Blood samples were collected twice at a three-week interval and tested in the national laboratory by CFT with negative results.

In order to ensure absence of infection with *B. mallei*, repeated clinical and serological surveillance was carried out, retesting contact horses in the *B. mallei* infected equine farm at a 3-week interval for three times considering that if animals exposed to infection may exhibit clinical signs or will turned (seroconversion would take place) serologically positive during further investigation. During the visit, no animals exhibited any clinical signs of glanders, and blood samples were collected 8 times: 3 times with negative results, plus 5 times tested with negative results by CFT in the national laboratory. Also, considering that glanders is a chronic disease and has a long incubation period, (6 months according to OIE *Terrestrial Code*, Article 12.10.1), further clinical and serological surveillance was carried out until 12 months after killing and disposal of the last case including disinfection of affected premises which dated 17 September 2019 to ensure absence of *B. mallei* infection.

In addition, during the above said period, as per suggestion of the OIE Regional Representative for the Middle East who visited Kuwait upon our request, blood samples were taken and sent to the OIE Reference Laboratory for glanders, Germany (Friedrich-Loeffler Institute, Jena). All samples were serologically tested by CFT with negative results.

## Passive and Active surveillance in the whole country

Glanders is a notifiable disease in Kuwait in accordance with the Veterinary Law and Decision No. 10 /1964 which outlines all the measures for the control, prevention and eradication of notifiable diseases. Disease reporting, quarantine measures, animal movement, livestock markets, slaughterhouses, stamping out, compensation and other responsibilities. Reporting of suspicion of glanders by equids owners and private veterinarians is a legal requirement, suspicious cases were investigated, no case of *B. mallei* infection detected clinically or serologically by CFT.

The total equid population [7,106] in the country, including imported horses, was serologically tested. Upon 7106 equids examined, 12,172 blood samples were collected (repeated sampling of about 5066 samples in the *B. mallei* infected farm, some equine stables, and equestrian clubs). 6968 equids were tested from the rest of the country and from premises with horse movements linked to the infected premises. Equids were serologically tested until 31 July 2020, and from 1 August until 17 September 2020 equids were clinically examined and no animals exhibited any clinical signs of glanders. The information with the results is displayed in table 2 (below). Based on the results of the surveillance carried out, 12 months have elapsed and no further cases were reported after the killing and disposal of *B. mallei* infected horses, including cleansing and disinfection of *B. mallei* infected equine farm (premises) carried out on 17 September 2019.

**Table 2 Results of Passive and Active serological surveillance in equids from 15 July 2019 to 31 July 2020.**

| Governorate       | Place                   | Number of Stables | Number of Horses | Number of samples | Repeated samples | Results   |
|-------------------|-------------------------|-------------------|------------------|-------------------|------------------|---|
| Al Ahmadi         | Wafra                   | 150               | 2342             | 4471              | 2129             | 6 horses positive by CFT test were detected in 1 farm |
|                   | Ahmadi Stables          | 31                | 289              | 555               | 266              |   |
|                   | Subtotal                | 181               | 2631             | 5026              | 2395             |   |
| Al Jahrah         | Kabd                    | 120               | 1821             | 2544              | 723              | negative  |
|                   | Adaly                   | 42                | 506              | 946               | 440              |   |
|                   | Sulybiyah               | 2                 | 37               | 37                | 0                |   |
|                   | Hijen                   | 5                 | 29               | 29                | 0                |   |
|                   | Farwaniya stables       | 53                | 509              | 1504              | 995              |   |
|                   | Jahrah Stables          | 27                | 240              | 240               | 0                |   |
|                   | Salmi                   | 2                 | 9                | 9                 | 0                |   |
|                   | Jahrah                  | 1                 | 12               | 30                | 18               |   |
|                   | Subtotal                | 252               | 3163             | 5339              | 2126             |   |
| Mubarak Al Kabeer | Sabhan                  | 25                | 1216             | 1633              | 417              |   |
| Al Ssema          | Saad alabdallah Academy | 1                 | 96               | 174               | 78               |   |
|                   | <b>Total</b>            | <b>459</b>        | <b>7106</b>      | <b>12172</b>      | <b>5066</b>      |   |

## **Equid import and export animal health measures:**

Horses imported into Kuwait must undertake a test with negative results by CFT in the country of origin prior to being exported to Kuwait. In addition, in compliance with the quarantine regulations, all these horses on arrival in Kuwait must undertake a second test with negative results by CFT in the national laboratory to be imported into the country. Equids and germplasm imported into Kuwait follows the veterinary law, and the provisions included in articles 12.10.4 to 12.10.7 of the OIE *Terrestrial Code*. Equids are imported into Kuwait from European Union countries free from glanders. Upon arrival at the airport, a verification of the documents (passports, veterinary health certificates, laboratory reports with negative results) and clinical examinations, including collection of samples for laboratory tests are conducted prior to allowing the equids into the country.

## **Laboratory diagnosis**

The National Veterinary Laboratory in Kuwait has the capacity to perform CFT tests for all suspicions and serological surveys. An experienced bacteriologist with experience in CFT diagnostic skills and with his technical team were involved in the surveillance program. Test procedures and interpretation of results were conducted in accordance with the CFT kit manufacturer's instructions.

All laboratory investigations were carried out at the National laboratory; however, positive cases were confirmed in the OIE Reference laboratory for glanders, Dubai, UAE and in ANSES lab, France (PCR and serology test carried out in France).

### **4.1 Early warning System**

Veterinary Authority, State of Kuwait implementing early warning system in accordance with the OIE *Terrestrial Code*, article 1.4.5.

- *B. mallei* infection is a notifiable disease, legal obligation by veterinarians and other relevant stakeholders to report suspected [cases](#) to veterinary authority.
- Epidemiological investigations: passive and active surveillance implemented and carried out since March 2012 after self-declaration for regaining free status and continuing. Three requests were received from horse owners to examine sick horses, clinical examination revealed no glanders signs. The horses were tested serologically by CFT with negative results.
- The national laboratory has the capacity to perform diagnostic tests in accordance with the OIE Manual prescribed CFT test to confirm or refute *B. mallei* infection serologically and reconfirmation by serologically and molecular diagnosis (PCR) to an OIE Reference laboratory for glanders.
- Communicated at national and at international level to the early warning center of the Gulf Cooperation council (GCC) for Arab States of Gulf and OIE WAHIS.
- The organization structure of the Veterinary Services of Kuwait and the chain of command is displayed in Annex 1, from the Deputy Director General for Animal Wealth to the main Departments, and thereafter to the units and field team.

### **4.2 Public health awareness.**

Notification to public health authorities continually carried out through the Committee of Zoonotic diseases, a joint committee between the PAAF and Ministry of Health. The risk of *B.mallei* infection as a zoonotic disease is explained to equids owners and to all personnel (attendants, farriers, etc) in the equid farms.

Public lectures, presentations and flyers are used to raise awareness of the *B.mallei* infection among veterinarians, equid owners and the public.

#### 4.3 Wildlife monitoring:

Free ranging wildlife equids susceptible to *B. mallei* infection are not present in Kuwait.

#### V. Measures to maintain free status:

Veterinary Authority, State of Kuwait implementing early warning system in accordance with the OIE Terrestrial Code, article 1.4.6, point No 4.

- In accordance with Veterinary law, 1964, Infection with *B.mallei* in equids is Notifiable Disease, and legal obligation by [veterinarians](#) and other relevant stakeholders to report suspected [cases](#) to veterinary authority.
- Epidemiological investigations: passive and active surveillance implemented and carried out since March 2012 after self-declaration for regaining free status and continuing.
- National laboratory having capacity to perform diagnostic tests in accordance OIE Manual prescribed test CFT to confirm or refute *B. mallei* infection serologically and reconfirmed by serologically and molecular diagnosis(PCR) with OIE the Reference laboratory for glanders.
- Equids imported in accordance with the OIE Terrestrial Code sanitary requirements. Equids tested with negative results by CFT from the country of origin prior to export to Kuwait. As per the quarantine regulation, all these horses on arrival to Kuwait tested with negative results by CFT in the national laboratory.
- Free ranging wildlife population susceptible to *B. mallei* infection is not present in Kuwait.
- Importation permitted only for registered horses and from the approved countries.
- Prohibited importation from glanders endemic and risk countries.

#### VI. Conclusion

Considering that:

- Prior to the confirmation of Infection with *B. mallei* (glanders) on 14 July 2019 in the national laboratory, the State of Kuwait had been free from Infection with *B. mallei* since 11 March 2012,
- A continuous awareness program for the disease is in place,
- A stamping out policy (selective killing, disposal of carcasses, and cleansing and disinfection of establishments) was applied and completed to the infected premises, including cleansing and disinfection of the infected premises on 17 September 2019,
- Twelve months have elapsed in accordance with the OIE *Terrestrial Code*, Chapter 12.10., Article 12.10.3 after cleansing and disinfection of the infected premises,
- Surveillance has been carried out in accordance with the OIE *Terrestrial Code*, Chapter 1.4 (Animal Health Surveillance), Chapter 12.10, Article 12.10.8 – 12.10.9 (for glanders), with no cases or no evidence of infection with *B. mallei*.

**The OIE Delegate of the State of Kuwait declares that the country complies with the requirements of "a country free from infection with *B. mallei* (glanders) in equids" as of 17 September 2020 with the provisions of Chapter 1.6 and Article 12.10.3 of the OIE *Terrestrial Code*, 2019, and consistent with the information provided in WAHIS.**



## Annex 1

Statement to be included in the self-declaration document.

I the undersigned, **Dr. Ali Al Qattan**, Delegate of the State of Kuwait to the World Organisation for Animal Health (OIE), take the responsibility for the self-declaration of freedom from **Infection with *Burkholderia mallei* (Glanders)** in accordance with the provisions of article 12.10.3, of the **OIE Terrestrial Code 2019**.

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Drawn up on 21 September 2020

Signature of the Delegate



رئيس المدير العام  
لشئون الثروة السمكية  
د. علي القطان

## Annex 2

### 1. Organizational structure of Veterinary Services

#### Legislation

Glanders is one of the notifiable diseases in Kuwait in accordance with the Veterinary Law and Decision No. 10 /1964, which outlines all the measures for the control, prevention and eradication of notifiable diseases. Disease reporting, quarantine measures, animal movement, livestock markets, slaughterhouses, stamping out, compensation and other responsibilities.

#### 2.1.2. The Veterinary Services in the State of Kuwait

Veterinary Services (VS) was started in 1956; the Ministry of Public Health organized VS until 1970 and Ministry of Public Works until 1982. In 1983, Public Authority for Agriculture Affairs and Fish Resources (PAAF) established, in which Veterinary Services (Animal Wealth is one of the constituent sectors with Agriculture and Fisheries Sectors the Authority. Since its formation VS being delivered in the State of Kuwait. The Director General as the Head of the Authority, monitor the activities of the each Sector, for VS in the PAAF based on organizational structure comes under the Deputy Director General for Animal Wealth (CVO), basically supervision of terrestrial animal health and welfare of live animals.

Both aquatic animals and the food safety aspects, covered by the OIE mandate, such as inspections of unprocessed animal products, chilled or frozen meat, fresh and chilled milk, table eggs, honey, inspection of meat abattoirs, imported animal products, food safety of products of animal origin entrusted with Authority of Food Safety and Nutrition(formerly by Kuwait Municipality)

Upon requested by the PAAF, State of Kuwait, Veterinary Services was evaluated by the OIE Performance of Veterinary Services (PVS) mission in 2007 and PVS Gap analysis mission from November 15 to 24 2009. The PVS Gap analysis mission has proposed organizational structure of Veterinary services (Annex 3)

#### 2.1.3. Organization structure functions (as per the OIE PVS Gap analysis mission proposal):

- The Chief Veterinary Officer(CVO), designated as Deputy Director General(DDG) for Animal Wealth manages directly seven department: Communication, Administration & Legislations, Animal Health, Epidemiology, Animal Production, Central Veterinary Laboratory(national laboratory), and the Kuwait Zoo.
- The Animal Health Department manages three units: Disease Control, Disease prevention and Quarantine and Border Inspection.
- The Chain of Command links the DDG for Animal Wealth to the Main Departments, and thereafter to the Units and field teams.
- Coordination at decentralized level is a key function of the Communication Department.
- The operational plans of the programs should clarify the responsibilities of each unit at local level as well as the reporting system.
- Data flow starts from the governorate units up to AHD and DDG. The communication unit plays the role of intra AHD information sharing.
- Data flow starts from to the governorate units and CVL to AHD (Epidemiology unit) and CVO, communication unit play the role of intra AHD information sharing.
- Epidemiology unit consolidates the data and generate technical reports to the AHD and DDG.
- Planning and monitoring of the programs is the responsibility of the public sector, however, consulting the private sector during planning is essential.
- Field implementation may be delegated to the private sector, but according to the standards, and rules set by the VS.
- All the activities have to be only guided by the technical and international standards as well as local situation and capacities without any political pressures.

**Equine diseases surveillance program and control unit established as proposed by the OIE PVS Gap analysis mission (this unit not included in the organization structure chart by the mission), at present this unit comes under existing Epidemiology and Zoonosis unit for planning, and monitoring vaccination, surveillance (Annex 3).**

VS is being delivered thorough its components organized in the Department of Animal Health, Department of laboratory services and Research, Department of Zoo animals and meat inspection by Public Authority for Food safety and Nutrition (formerly Kuwait Municipality). Animal Health Department has more responsibilities and has

following main divisions namely **Epidemiology unit, disease prevention, control and quarantine and border protection unit.**

**The following Animal health and welfare measures implemented by the VS**

- Prevention, control, and outbreaks notifications,
- Epidemiological investigations: passive and active surveillance for OIE listed diseases, including exotic and emerging disease.
- Official Vaccination for ruminants (FMD, IBR/ BVD, brucellosis, sheep and goat pox) Equids (Equine influenza, and EHV 4), Poultry (ND, IBD, AIB, ILT)
- Risk analysis for live animal importation and international certification procedures,
- Preparation of contingency plan for OIE listed diseases, including exotic and emerging disease.
- Border protection through quarantine stations for live animals import.
- Registration and issue license for practicing veterinarians in the field.
- Disinfection and Disinfestation of farm premises and official disposal of animals and its products.
- Implements animal welfare measures in accordance with OIE Terrestrial Code standard requirements and GCC countries animal welfare regulation.

Seven quarantine stations across the country for border security for entry of live animals and its products, one public veterinary clinic for commercial dairy cattle farms 14 private hospitals and 3 private clinics are operating across the country.

One National Laboratory with adequate facilities established which undertakes diagnostic investigation on samples submitted from routine clinical practices, outbreaks investigations and surveillance program.

International equine hospitals established by private sector providing therapeutic measures for equids.

Annex 3

Organization structures of Veterinary Services in the State of Kuwait (proposed by the OIE PVS Gap Analysis Mission)

