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هيئة الصحة العامة
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KSA: One Health Approach Experience and Challenge during MERS-CoV

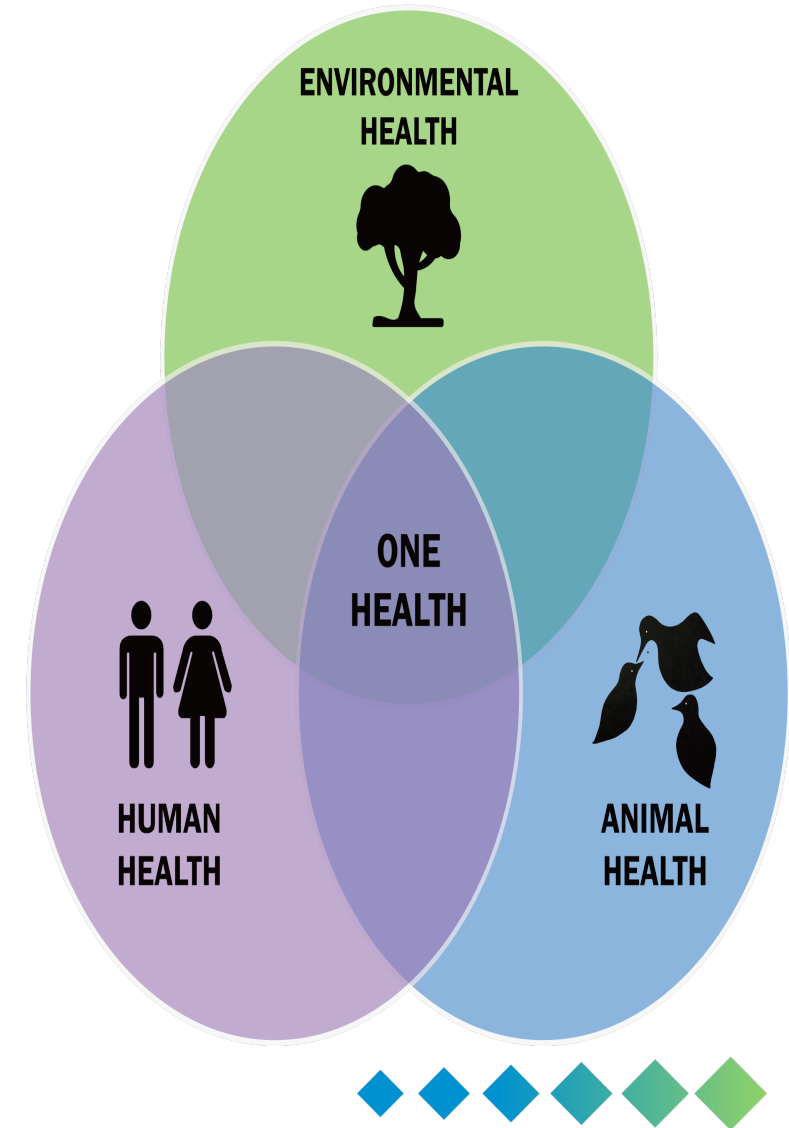
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One Health approach (OH):

- The One Health approach is a collaborative and integrated approach that recognizes the interconnectedness of human, animal, and environmental health.
- It seeks to improve the health and well-being of all living beings by addressing the complex interrelationships and shared health risks among humans, animals, and the environment.
- It involves multiple disciplines and sectors, including public health, veterinary medicine, environmental science, and social science, and emphasizes the importance of communication, collaboration, and coordination among these fields to achieve optimal health outcomes.



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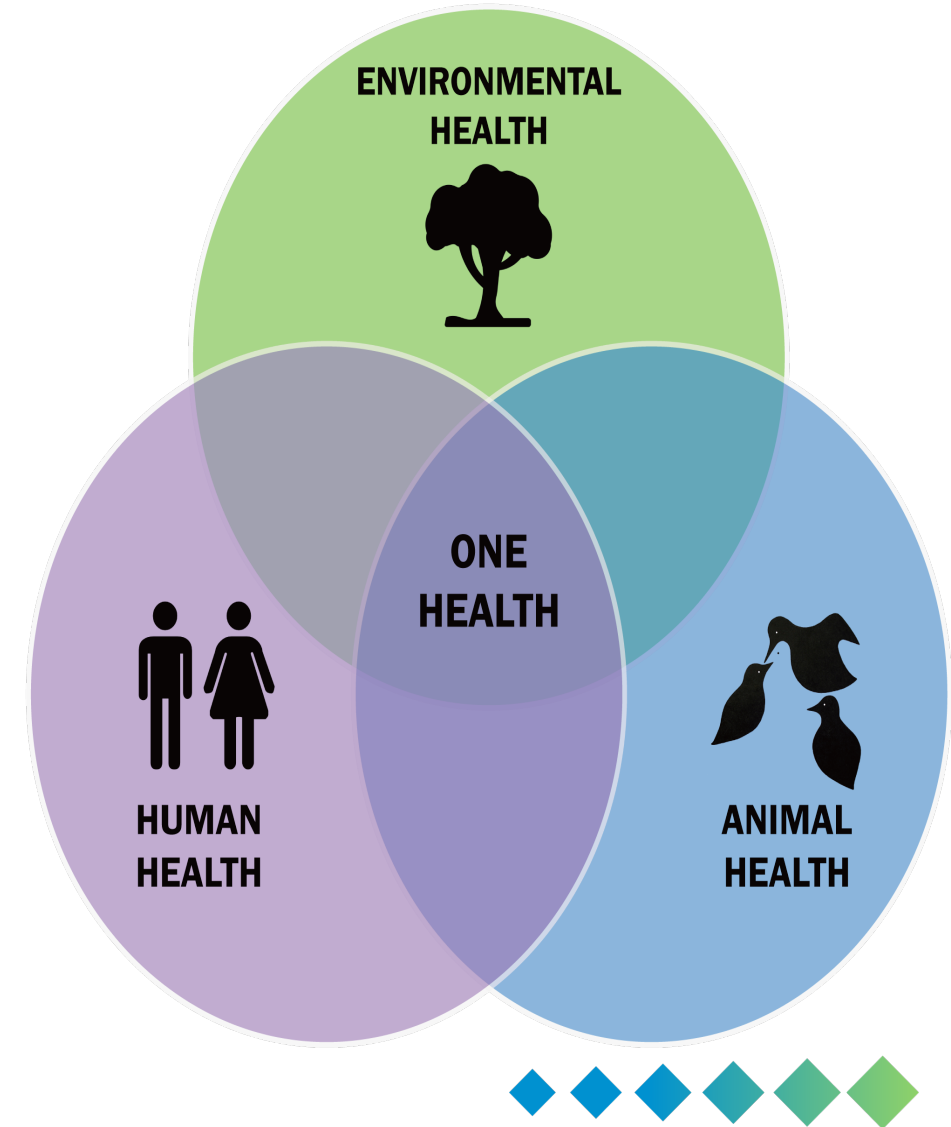
MERS-CoV Preparedness and Response activities



Implementation strategy using One Health approach:

Continuous Monitoring And Evaluation in Saudi Arabia:

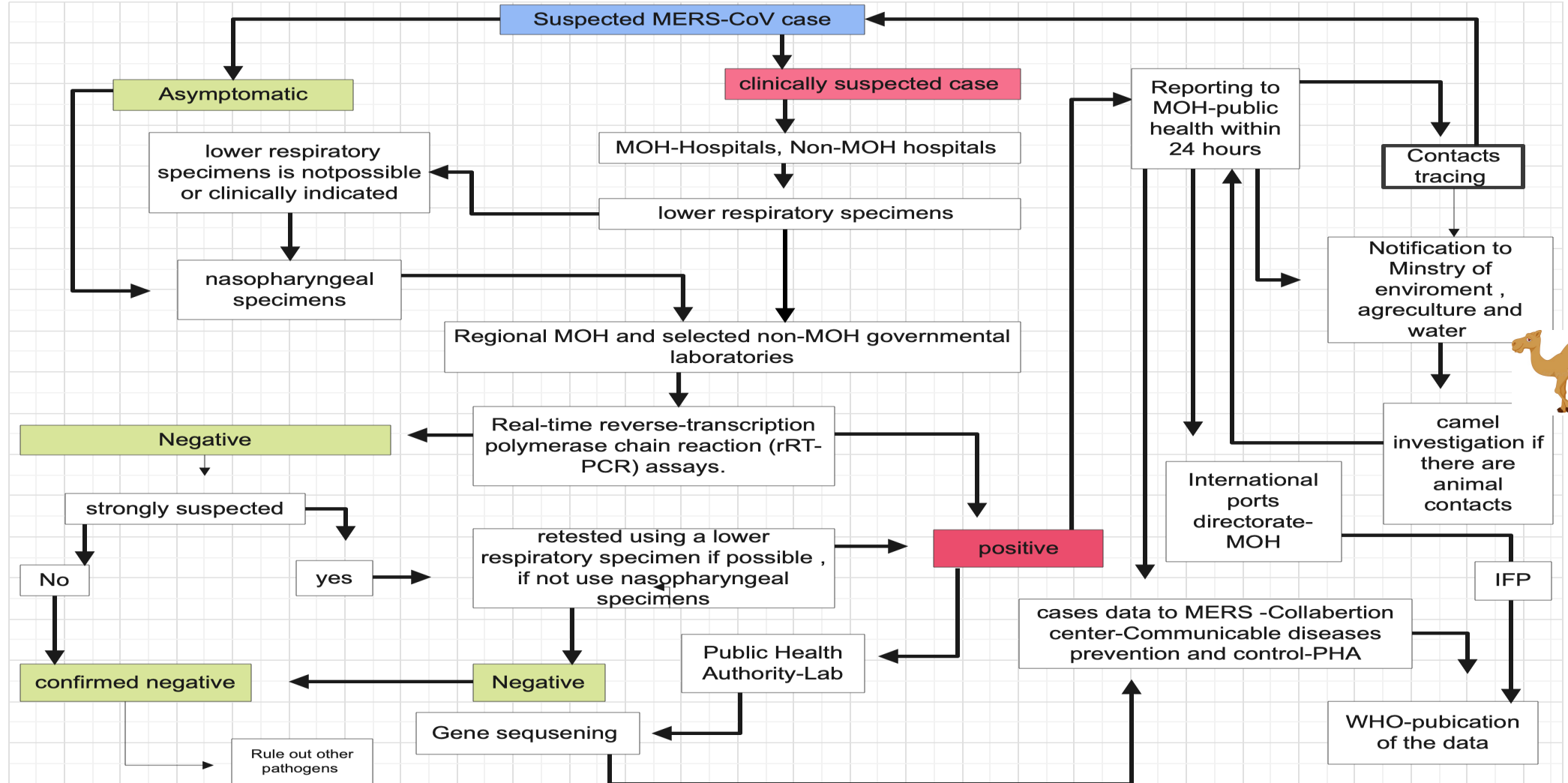
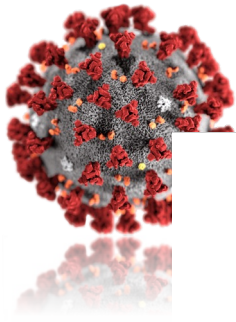
- i. **Healthcare facilities** are subjected to number of accreditations bodies to ensure the application of highest standards of quality in medical care and patient safety.
- ii. **MERS-CoV Preparedness tool:** (tool used for covid19 too) A weekly self-reporting tool required by each facility on its preparedness to manage cases of MERS-CoV/COVID-19, which is evaluated by an auditor from the GDIPC on monthly basis.
- iii. **ICA:** An auditing program that all hospital should meet its standards with evaluation period: Bi-Annual.
- iv. **Hospital that are accredited by Saudi Central Board For Accreditation Of Healthcare Institutions (CBAHI)** are subjected to unannounced visit at anytime to ensure application of infection control measures that are related to MERS.



MERS-CoV and infection control:

- Standards policy and guidelines in high risk area for HCWs:
 - ✓ Implemented written policy and procedure for suspected or confirmed MERS-CoV/COVID-19 patients based on updated MOH guidelines.
 - ✓ Protocol for early detection, management, and transfer of respiratory illness patients “Flow Chart” must be available and present on well seen place.
 - ✓ Hand hygiene supplies are available and accessible for HCW and patients (hand washing sink, hand rub dispenser, paper towels) in all care areas.
 - ✓ HCWs have received documented continuous job-specific infection control training on MERS-CoV/COVID-19 with competency assessment







MERS-CoV Sample Collection Procedure for animal.

- ✓ When a notification of confirmed case was received , the epidemiological team conduct an urgent outbreak investigation and collect sample from animals who were in contact with confirmed human cases
- ✓ The samples must be sent to the lab within 24 hours of reporting.
- ✓ **Sampling method:** Samples from **10 animals** that had the close contact with confirmed human case should be collected. If there were different types of animals, 5 samples from each kind should be conducted.



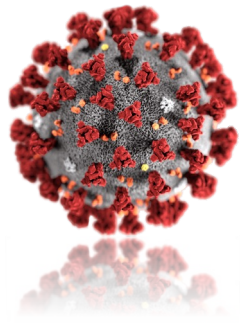


- Since the emergence of indications of the possibility that the animals have a role in the transmission of MERS-CoV to humans, MEWA set up plans to investigate this role including:
 - The MEWA collaborated with relevant authorities.
 - Determining the prevalence of MERS-CoV in farm animals through many studies.
 - Implementing veterinary awareness
 - Establish Weqaa Center (National center for Prevention and Control of plants pests and animal diseases)

WEQAA CENTER | مركز وقاء

المركز الوطني للوقاية من الآفات النباتية والأمراض الحيوانية ومكافحتها
National Center for the Prevention & Control of Plants Pests & Animal Diseases





Investigating animal



MERS-CoV Sample Collection Procedure for animal:



**167 Notifications from
MOH about MERS-
patients have contact with
animals**



- 72 out of 167 reports found they did not have animals

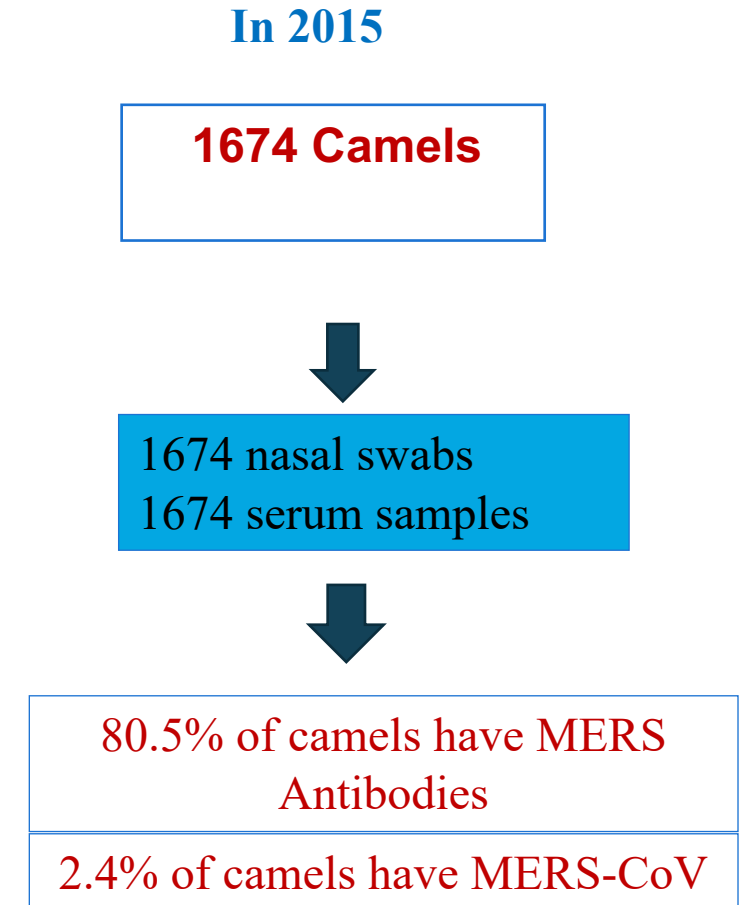
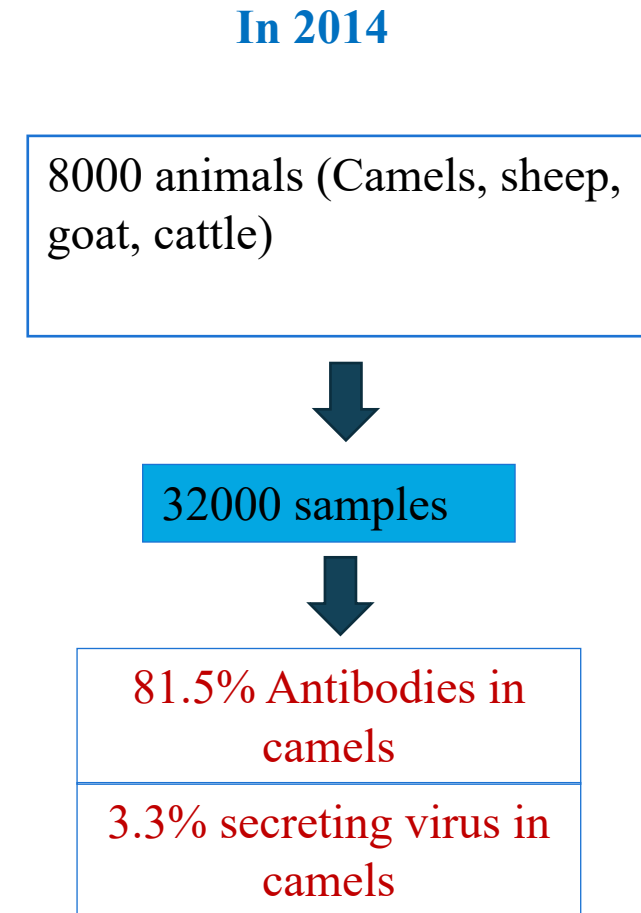
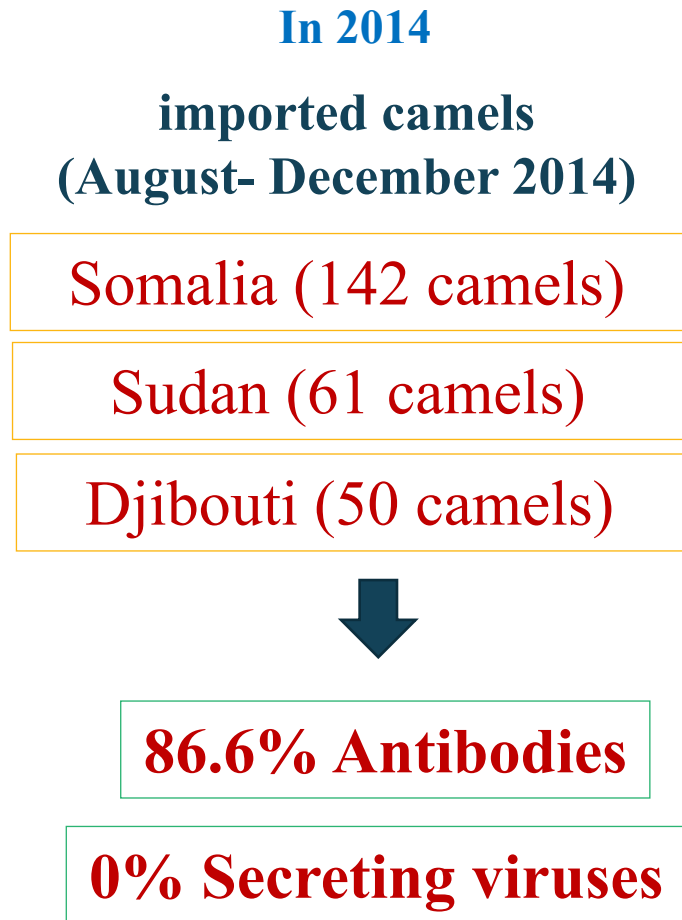
13 reports were not be able to access

- 14 reports have animals other than camels
68 reports have been assessed

- 20 herds found positive to MERS-CoV



Field studies of Animal Farms



Five areas (Riyadh , Eastern , Northern , Makkah , Jizan)



❖ Main Results :

- In the two studies, **Riyadh** was the highest in the spread of the virus among camels by **9.4% and 12%**
- Newborns less than one year old were the highest prevalence of the virus in the **first study** by 4.99%, whereas camels from 1-3 years old were the most distinguished by 3.5% in **the second study**.
- Risk factors identified here e.g. regions distribution, can be considered to be predictors of MERS-CoV infection in camels and should be taken into account when developing an efficient and cost-effective control strategy





Conclusion:

- Region's distribution were identified as **risk factors**.
- **High prevalence of MERS-CoV** infection were found among dromedary camels.
- About **56.4% were found in** livestock markets and slaughter specifically in winter season and young age animals.

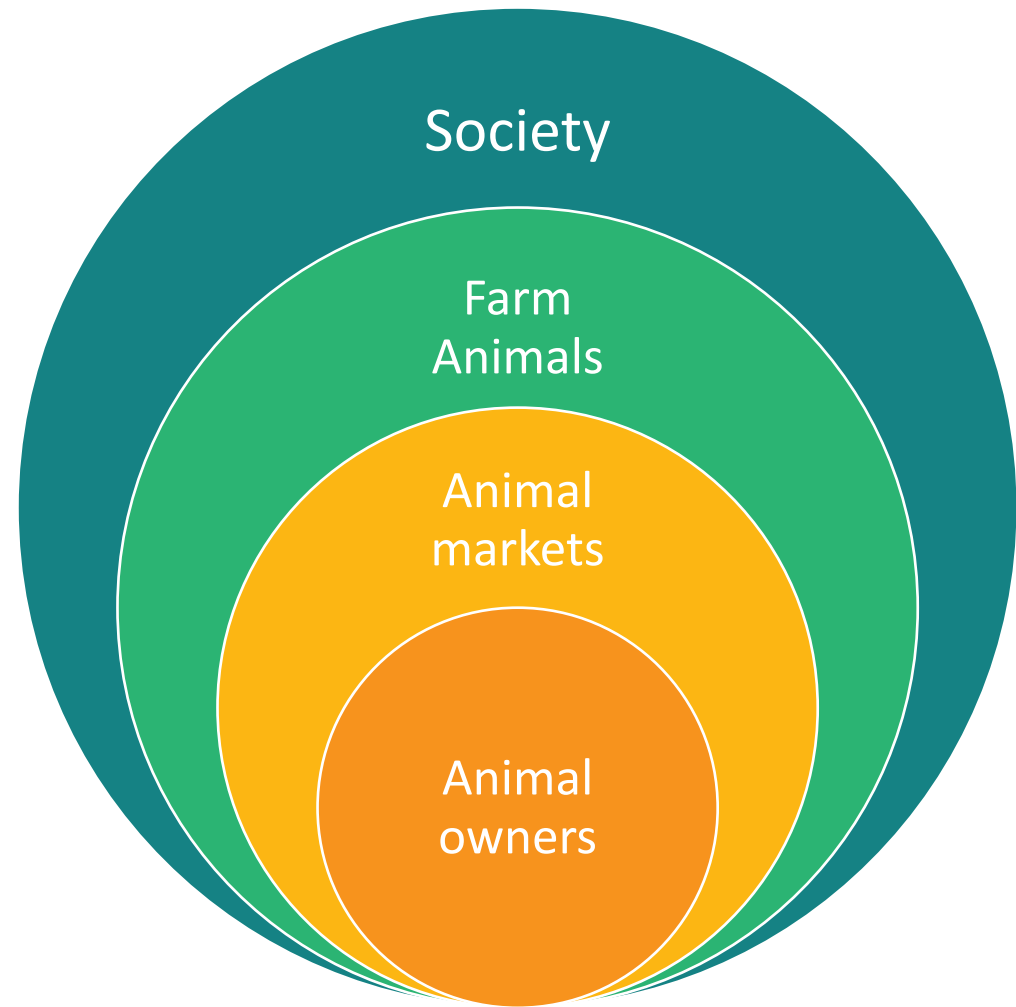
Phylogenetic analysis of MERS-CoV partial genomes

- Ten MERS-CoV isolated samples of camels were sequenced from Riyadh and Jeddah.
 - There is a **correlation between** viruses isolated from camels and viruses isolated from humans
 - It was found that isolated viruses **were similar to viruses** isolated from human cases
 - Full genome sequences of the ten MERS-CoV camel samples and their corresponding from patients were aligned with MERS-CoV reference strains available from GenBank.



Awareness campaigns

- ✓ Livestock markets.
- ✓ Animals Farms
- ✓ Owners gathering places (Festivals , workshops).
- ✓ Veterinary clinics either governmental or private.



Media campaign

The use of all media To raise awareness of the importance of taking precautions in dealing with camels and their products



Photo of some special publications for MERS



الإرشاد البيطري
VETERINARY GUIDANCE

فيروس كورونا

متلازمة الشرق الأوسط التنفسية ((MERS))



الإرشاد البيطري
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رقم غرفة الطوارئ
٨٠٠ ٢٤٧ ٠٠٠٠
www.irshadvetsu.com

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أخي المربي :

عند ملاحظة وجود أحد الأعراض التالية على الحيوانات

- إفرازات أنفية أو مخاطية.
- التهابات تنفسية.
- إصابة الحيوانات بالإسهال.

إحرص على استشارة طبيبك البيطري أو إبلاغ أقرب وحدة بيطرية



الإرشاد البيطري
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الوقاية من خطر الإصابة بفيروس كورونا ((MERS))



تناول الحليب المبستر والمعروف المصدر أو غليه قبل تناوله واطهي اللحوم جيداً وذلك للوقاية من الأمراض المشتركة التي قد تنتقل إلى الإنسان



يجب غسل اليدين جيداً بالماء والصابون ويفضل استخدام المواد المطهرة أثناء الغسيل وبعد الخروج من حظائر الحيوانات مباشرة عند التعامل مع الحيوانات الحية



المحافظة على النظافة العامة والنظافة الشخصية وحماية البيئة من التلوث والتخلص الصحي من الحيوانات النافقة ومن المخلفات ووضعها في الأماكن المخصصة لها



يفضل تحديد ملابس خاصة لاستعمالها داخل حظائر الحيوانات وعدم الخروج بنفس الملابس إلى أماكن أخرى



تجنب الإختلاط المباشر مع الحيوانات الحية والحرص على ارتداء الكمامة والقفازات الواقية أثناء التعامل معها أو التواجد بأسواق الحيوانات وتجنب قدر المستطاع ملاسة العين والأنف والفم إلا بعد غسل اليدين جيداً

عدم ذبح الحيوانات إلا في المسالخ الرسمية والخاضعة للإشراف البيطري





الإرشاد البيطري
VETERINARY GUIDANCE



Photo of some special publications for MERS



Hajj Season

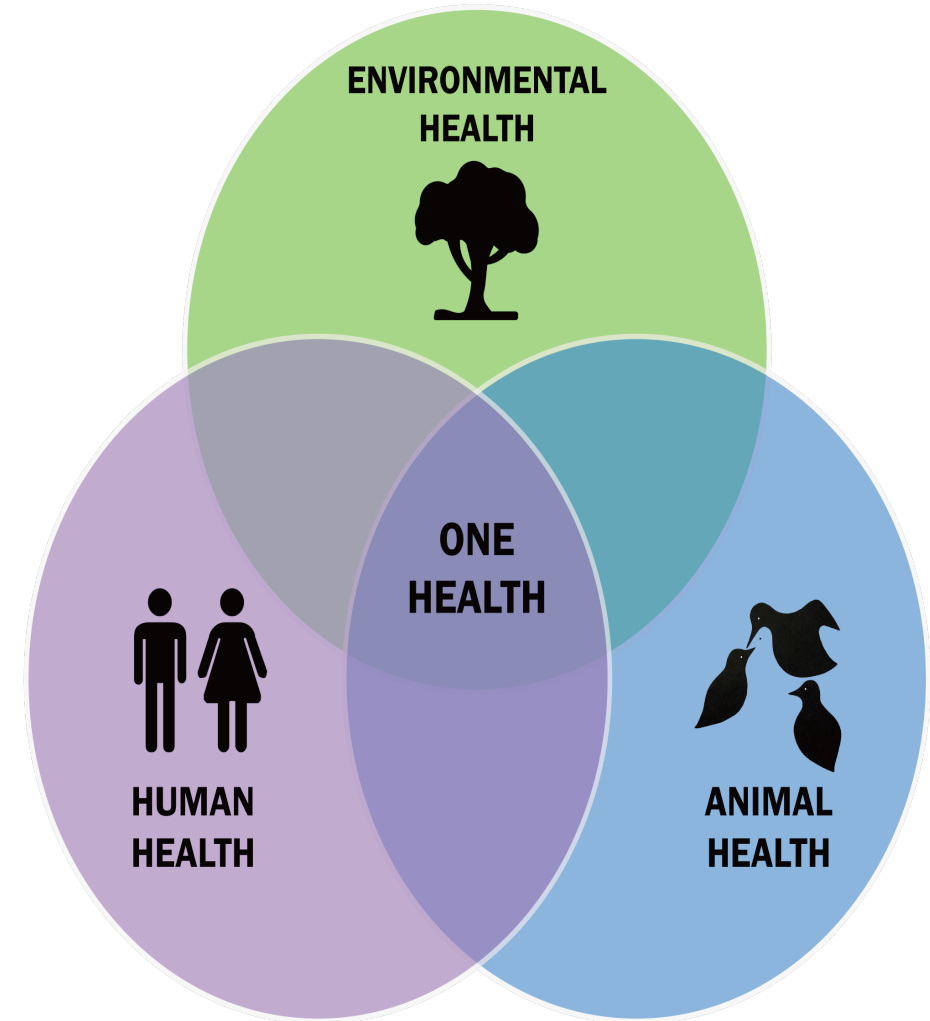
Case reported during Hajj:

- Notably, apart from **one unconfirmed case**, no other cases of MERS-CoV infection were reported in the 6.5 million pilgrims who took part in the *hajj* in 2012 and 2013.
- Among pilgrims returning home, a **lack of adequate surveillance systems in resource-limited countries can make it hard to identify pathogens** with long incubation periods, such as MERS-CoV.



Hajj Season

- i. **In 2015, a statement was issued as the following:**
- Saudi Arabia banned the slaughter of camels in hajj season, after a surge in deaths from the MERS virus linked to the animals issued.
 - Camels were not allowed to enter any camels gathering or festivals unless it's screened and tested for MERS.



Preparedness for Pandemic and Epidemics Committee

- This committee was established to govern the public health policies including MERS-CoV and to implement strategy using OH approach.
- To enhance Collaborations with Public Health Authority and reverent stakeholders such as, **MEWA, MOH, Ministry of Interior, Ministry of Municipal and Rural Affairs,.....**



Future pandemic using One Health approach: Recommendations

- Taking advantage of past experiences in **MERS and Covid19** to prepare for the next pandemic by enhancing and expand the surveillance systems , sharing data , training , and community engagement and mobilization .
- Improve rapid response capability and coordinated contingency plans for the emergence pathogens
- Strengthen and integrate programs to monitor and prevent emerging infections
- Strengthening laboratory capacity to help in early identifying and characterizing the emerging pathogens (including the genome sequence of the virus).



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Thank you

