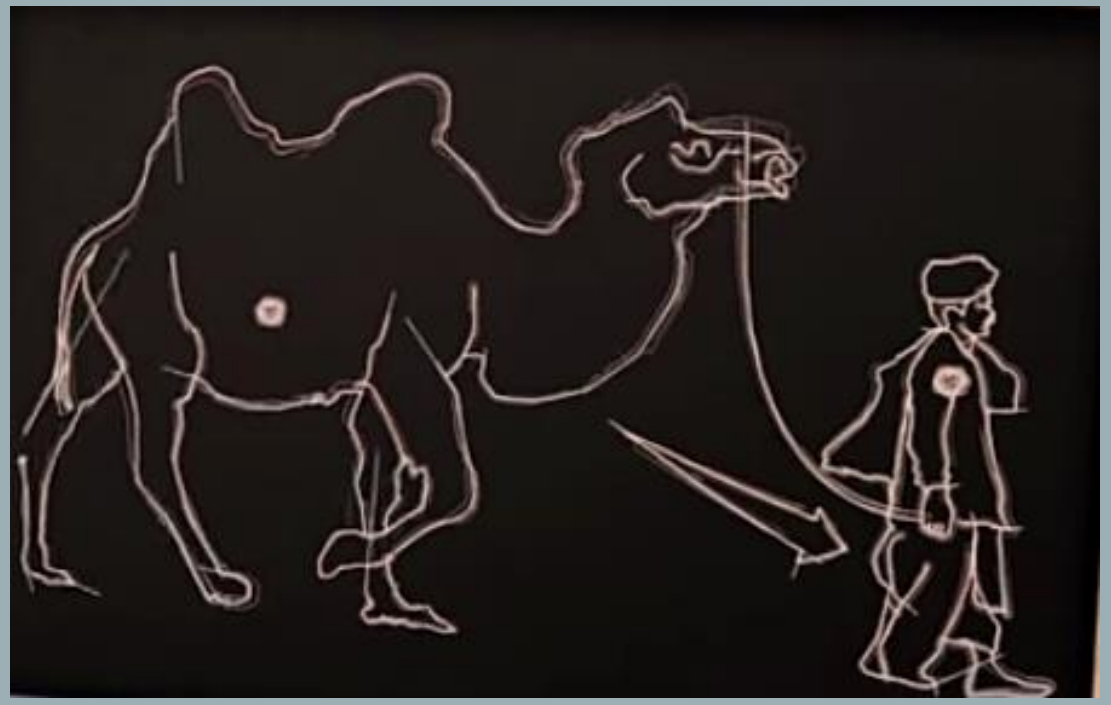
MIDDLE EAST RESPIRATORY SYNDROME (MERS)

From 🐫 to the desert people



Source:WHO and CDC

BACKGROUND

- A severe lung infection
- First identified in 2012 in Saudi Arabia and Jordan
- Caused by the MERS Coronavirus (MERS CoV), an animal virus found in dromedary (single-humped) camels, able to infect humans
- Adults are more commonly infected

  Males over 60 years with underlying conditions, Such as diabetes or kidney failure, are at greater risk of severe illness and death.
- Around 35% of people with proven cases of MERS die

MERS-COV

- **MERS-CoV is a zoonotic (animal) virus from the coronavirus family**
- **Coronaviruses are a large family of viruses that can cause a range of illnesses in humans, from the common cold to severe acute respiratory syndrome (SARS)**
- **Coronaviruses also cause disease in a wide variety of animal species**

- A spherical, enveloped,
- single-stranded, RNA virus
- Has a protein, Spike (S), that interfaces with its human host receptor, dipeptidyl peptidase 4 (DPP4), to gain entry to human cells
- Protein S is also the target for the human immune response against MERSCoV, so it is now the focus of research to develop vaccines against MERS

SYMPTOMS

- The most common symptoms of MERS are a fever , a cough, and shortness of breath. People may also have gastrointestinal problems, such as diarrhea, nausea, or vomiting.
- Pneumonia is a common complication. There have also been reports of organ failure linked with MERS, especially kidney failure.
- The symptoms usually appear 5 to 6 days after exposure to the virus, but they may take 2–14 days to arise.

DIAGNOSIS

- **A case of MERS-CoV infection may be laboratory confirmed by:**
- **Detection of viral nucleic acid, or by using serology to demonstrate antibodies.**
- **The presence of viral nucleic acid can be confirmed by either**
- **a positive real-time reverse transcriptionpolymerase chain reaction on at least two specific genomic targets, or a single positive target with sequencing of a second target.**
- **Laboratory investigations required for case confirmation**

- A case confirmed by serology requires demonstration of samples ideally taken at least 14 days apart,using a 2-stage testing process:
- Screening using an enzyme-linked immunosorbent assay (ELISA)
- ▪ followed by a confirmatory test using a whole-virus indirect fluorescent antibody (IFA) test or microneutralization test.

TREATMENT

- Although there is no specific cure for MERS-Co infection, the following 3 supportive therapies are used to counteract the symptoms and increase chances of survival (35% case fatality rate to date)
- **1. Antimicrobials**: suitable for likely pathogens, including community-acquired pneumonia or health care-associated pneumonia (if infection was acquired in health care setting) and sepsis.
- **2 Oxygen:** people with severe acute respiratory illness with signs of respiratory distress, reduced blood oxygen levels (hypoxaemia), or shock should be given supplemental oxygen therapy immediately
- **3. Specific treatment for underlying condition such as diabetes, kidney failure**
- Many people with severe cases of MERS have underlying conditions and this group are at greatest risk of dying from MERS.

PREVENTION

- Wash your hands often with soap and water for at least 20 seconds, and help young children do the same. If soap and water are not available, use an alcohol-based hand sanitizer.
- Cover your nose and mouth with a tissue when you cough or sneeze, then throw the tissue in the trash.
- Avoid touching your eyes, nose, and mouth with unwashed hands.
- Avoid personal contact, such as kissing, or sharing cups or eating utensils, with sick people.
- Clean and disinfect frequently touched surfaces and objects, such as doorknobs.