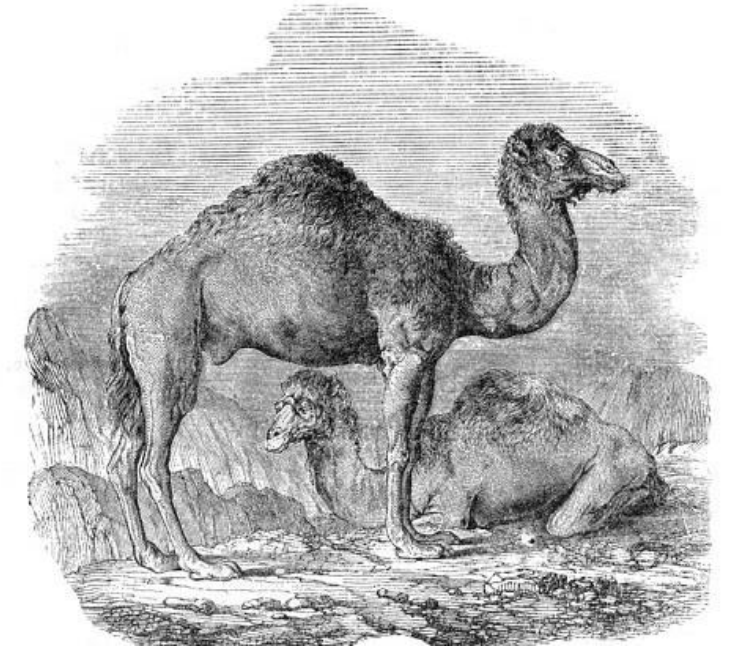


Dr Mehdi EL HARRAK

DVM PhD

Chairman of OIE Ad Hoc Group on
Diseases of Camelids

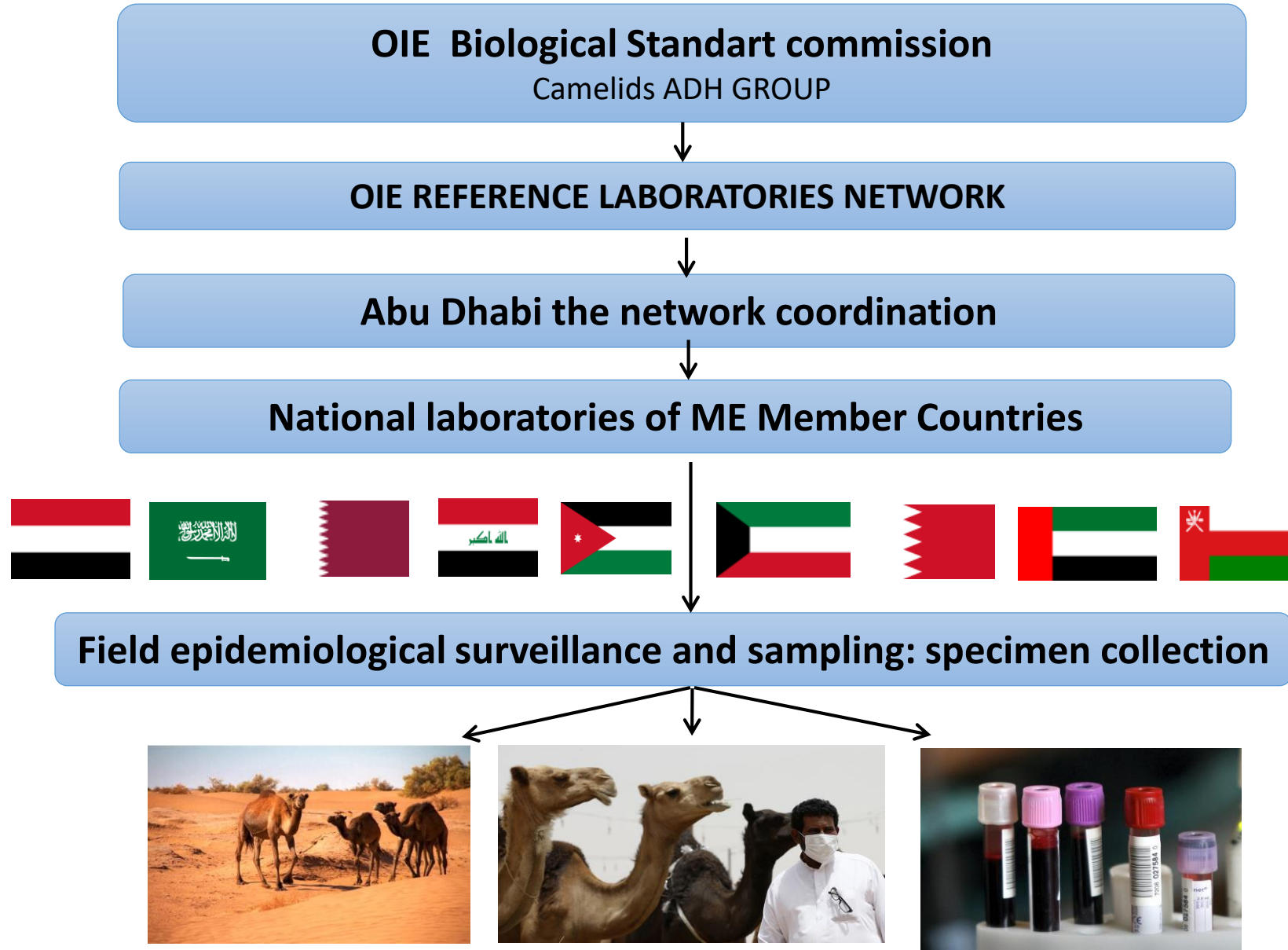


Role of the delegate, husbandry,
epidemiologist and laboratory
persons for sampling logistic.

CAMENET OBJECTIVES

- Overview of the Major camel diseases in the region
- Development and validation of diagnostic techniques.
- Development and validation of curative products.
- Dissemination of knowledge to member countries and the international scientific community.
- Recommendation of the OIE Ad Hoc Group on Diseases of Camelids

The Network FLOWCHART



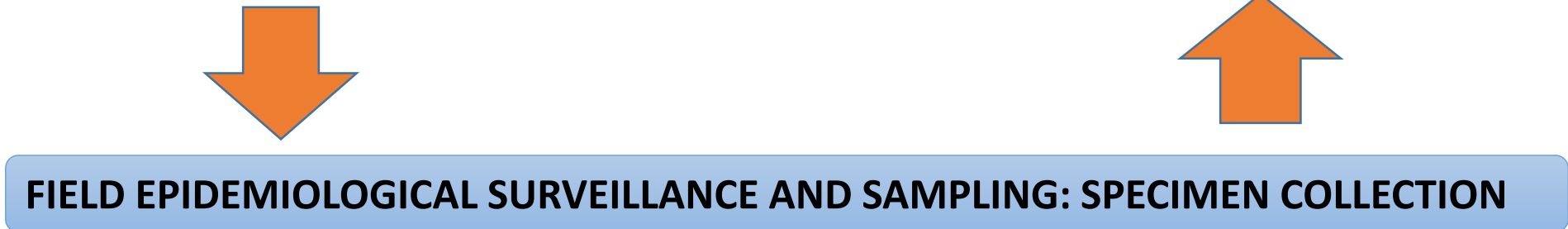
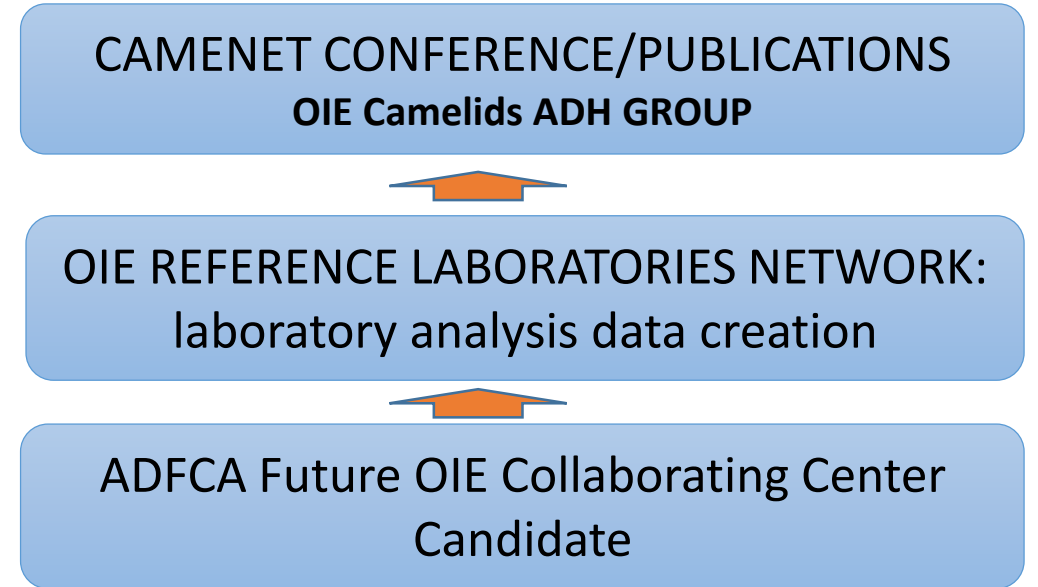
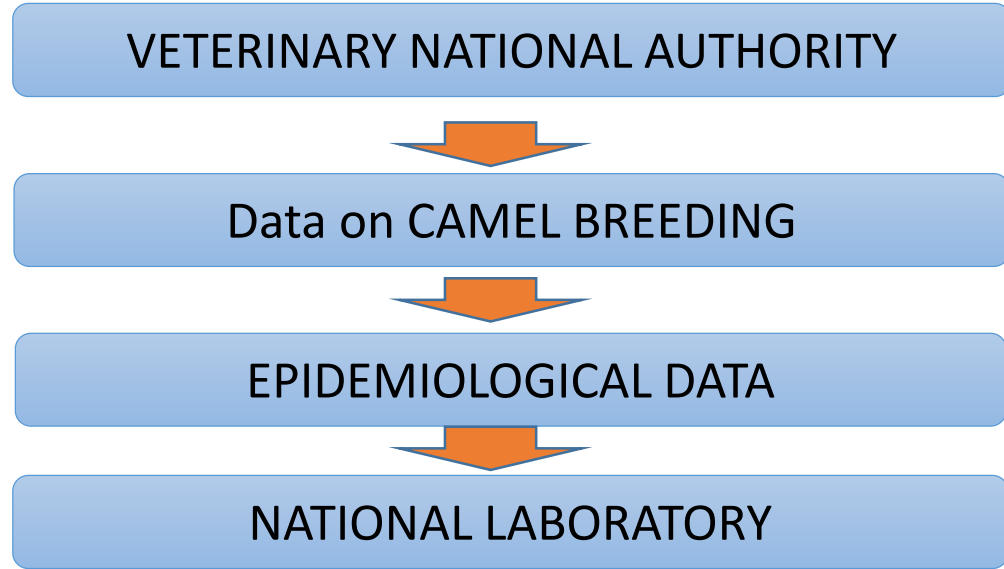
Epidemio-Surveilliance and specimen collection

Prior:

- Global contribution of different stakeholders including CVO, Camel breeders, veterinary clinicians and epidemiologists, laboratory technicians data analysis experts.
- Assistance from international organizations necessary to share expertise and knowledge
- Need of political and financial support from national authority and appropriate organization from veterinary services

During:

- Field surveillance for clinical cases and randomly collect of camel sera to investigate seroprevalence of the most important viral and bacterial pathogens.
- Clinical surveillance and sampling in quarantine stations for import/export animal in/out of the country
- Randomly collect samples from markets abattoirs camelodroms for active surveillance
- Protocols and guidelines for serum collection and dispatch sent by RL to the national laboratories.



SURVEILLANCE FLOWCHART

Delegate CVO role

- To assure logistic of the network and commitment of the national authorities
- Participate in various meetings of the SC and network conferences and inform on the ongoing work in the country and the obtained results.
- Inform the network on endemic or sporadic diseases in the country as well as any health event and emerging diseases.
- Endorse recommendations of the Group in camel movements and trade and diseases surveillance

Information on camel breeding

- Camel global population (local, imported, adult, young)
- Geographical distribution
- Type of breeding (pastoral, agro-pastoral, intensive)
- Production animals (meat, milk, skin, wool)
- Transportation (goods, people)
- Leisure (race, hikes)
- Import: origin, number, purpose, quarantine
- Other livestock species information (dogs for rabies, cattle for TB)

Camel breeding focal person

The camel breeding focal person will participate in the network meetings and transmit a report regarding:

- The existing camel population in the country
- Information on the breed types,
- Geographical distribution,
- Importation origin itinerary quarantine
- any other information that may help in the sampling protocol design.

Epidemiologist role

- To propose the survey protocol, defining the specimen number, specific breeds, localization, age, sex and origin.
- Samples number should be representative for each category of population. Ideally 10% of the camel population is sampled, the total number should be a minimum of 1000 per country and a maximum of 10 000 in countries with huge camel population.
- The epidemiologist will design the survey according available data on local pathology of camels. He will organize the survey and supervise the sampling and produce the **database of collected specimens**.
- Serum samples will be randomly collected from live animals or slaughterhouses in regions rearing camels. Specimen of organs or swabs with suspicious lesions for diagnostic confirmation will also be collected.

NATIONAL DIAGNOSTIC LABORATORIES

- ▶ Follow epidemiological situation regarding camel pathology, collect specimens from clinical cases or passive/active surveillance
- ▶ Perform basic analysis for primary diagnostic such serology and molecular biology
- ▶ Provide information and biological material
- ▶ Participate in the network activities
- ▶ Participate in proficiency testing for validation and harmonization of diagnostic methods, communicate results and analyze areas for improvement.
- ▶ Participate in the creation and management of the BioBank
- ▶ Establish a biosafety and a biosecurity systems and procedures and ensure implementation of international standards for labs and animal housing;
- ▶ Collaborate and exchange research and information with other relevant laboratories;

Laboratory focal person role

- The laboratory focal person is responsible of specimen reception, treatment, storage in recommended conditions and the shipment to ADFCA or the OIE Reference Laboratories if required.
- The national lab is responsible for specimen identification storage and shipment
- Clinical surveillance system in the field
- Laboratory diagnostic
- Information on the national lab
- Used techniques
- Camel specimens usually received (nature, numbers, suspicion)
- Available biological material (sera, tissues, isolates)
- Research activities and Scientific publication

Collection of specimen

- Establish a protocol to conduct regular serological surveys on the population of camels in the country. The number and location of sampling are determined by the CP based on the size, geographic distribution of the population and types of livestock (milk or meat production, racing and leisure, transport and agriculture). Ideally sampling may concern 1% of the population.
- Collect samples from clinical cases or in slaughterhouses, markets and sensitive points, to be send to the OIE Reference Centers within the network activities.
- Each specimen is aliquoted in three, one stored in the country of origin, one for ADFCA collection of biologicals and one for analysis at the OIE RL.
- Assure shipment of specimen to the OIE Reference Laboratories according to IATA recommendations for air transport of biologicals.
- Participate in laboratory analysis and interpretation.
- Send frameworks for training in monitoring and diagnosis of camel diseases.
- Participate in inter-laboratory testing (Proficiency) for validation and harmonization of diagnostic methods, communicate results and analyze areas for improvement.

Specimen collection

- Tissue (lung, spleen, brain, skin)
- Blood (serum and total blood)
- Feces
- Swabs

Camel concentration sites

- Quarantine stations (import)
- Slaughter houses
- Camelodrom
- Markets

Recommended quantity

- Sera: 5000/year (local and imported)
- Others: pending on observed cases

Geographical distribution

Cover the whole country quarantine stations

Seasonal distribution

Collect season depend on diseases



The ADFCA

- **Acting as the regional reference lab, ADFCA** would supervise the entire operation of the survey design and execution in each country, organize reception storage and shipment to the OIE RL. Laboratory analysis and data interpretation and diffusion are ADFCA and OIE RL responsibility.
- Analysis will be carried out using appropriate techniques (Elisa and Virus neutralization) on the following non-exclusive list of diseases to establish the prevalence of important camel diseases in the different region

OIE REFERENCE LABORATORIES



- OIE Reference Laboratories are designated to pursue all the scientific and technical problems relating to a named disease or specific topic.
- The Expert, responsible to the OIE and its Member Countries with regard to these issues, is a leading and active researcher helping the Reference Laboratory to provide scientific and technical assistance and expert advice on topics linked to diagnosis and control of the disease for which the Reference Laboratory is responsible.
- Reference Laboratories also provide scientific and technical training for personnel from Member Countries, and coordinate scientific and technical studies in collaboration with other laboratories or organisations, including through OIE Laboratory Twinning.
- In 2015, the OIE has a global network of 252 Reference Laboratories covering 118 diseases or topics in 39 countries, and 49 Collaborating Centres covering 46 topics in 26 countries.

Output: First Step

Identification of important camel diseases in the country or zone:

- Clinical severity

- Distribution

- Targeted animals (young pregnant race...)

- Economical impact (trade)

- Public health impact (zoonotic diseases)

Determination of the prevalence of important camel diseases in a country or zone:

- Geographical distribution

- Seasonal distribution

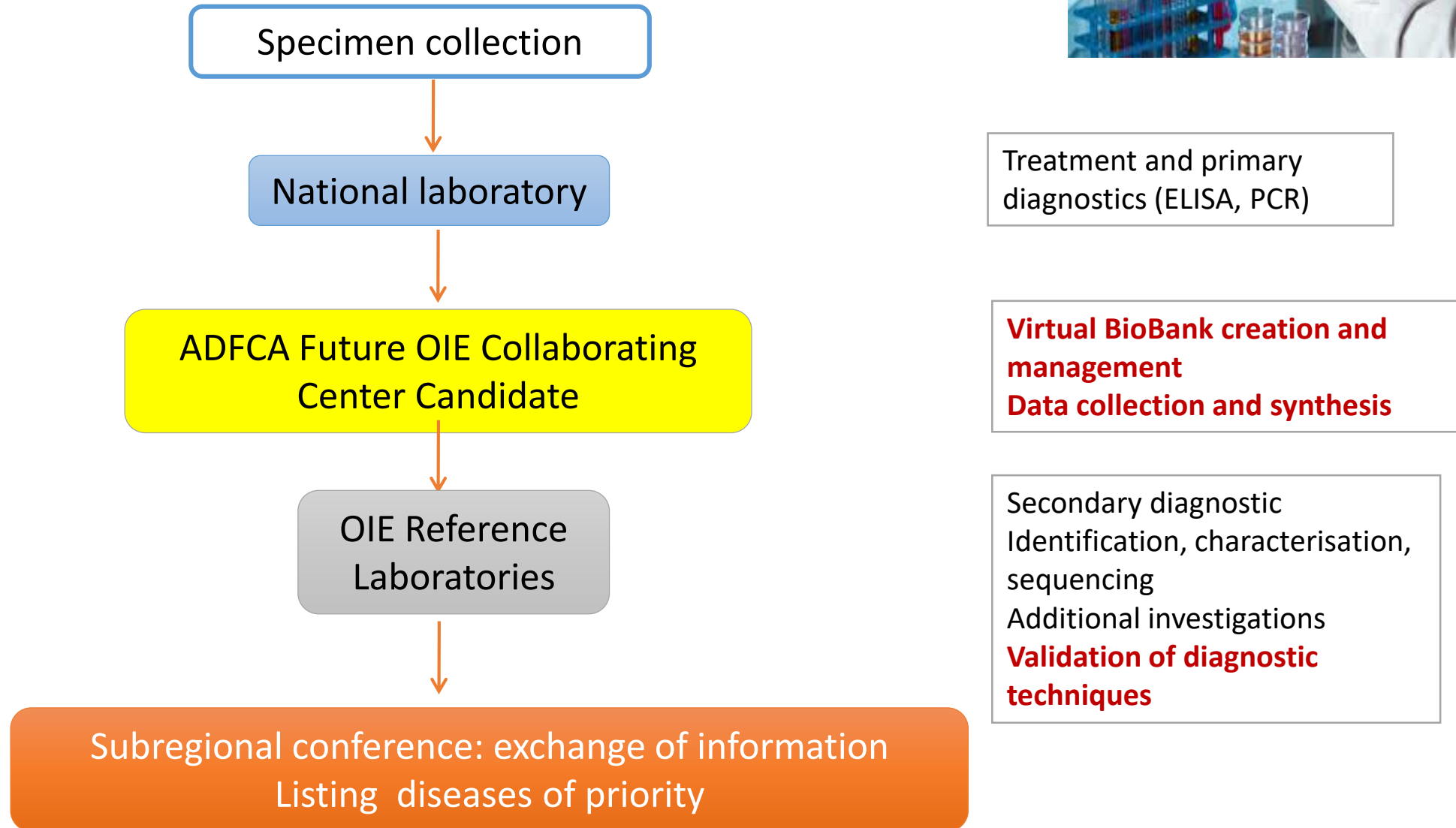
- Local or imported animals

Identification of important camel diseases in neighbouring countries in Africa or Asia (import)

Determination of camel susceptibility and transmission mechanism

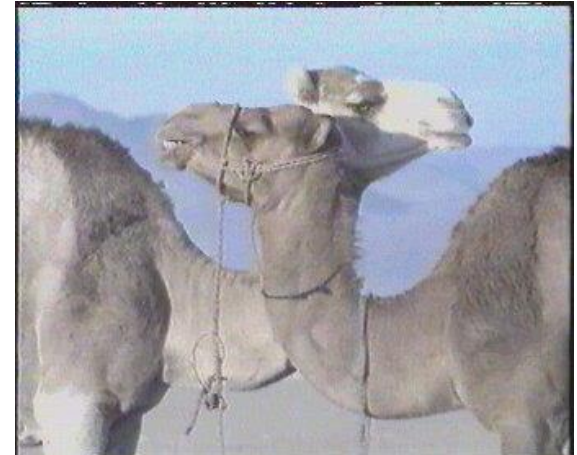
Biological material collection for standards reference preparation and BioBank establishment

Information flowchart



Dissemination of Knowledge

- Sub-regional Conference
- International Meetings
- Scientific publications
- OIE Ad Hc Group on Camel Diseases
- OIE Biological Commission
- Advice in animal movement and camel product trade



*Thank
you*

