THE MINISTRY OF HEALTHCARE OF THE REPUBLIC OF KAZAKHSTAN

ARAL ANTI-PLAGUE STATION

Biosafety of Work Environment in Natural Foci of Especially Dangerous Infections in Kazakhstan

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Characteristics of the Aral Sea area

Once the Aral Sea was the 4th largest in the world.

Reasons for shallowing of the Aral Sea

1. The destruction of the bottom layer of the Aral Sea
2. The disappearance of the Aral Sea is a natural process, connected with the global climate change of the planet
3. The degradation of the surface of mountain glaciers, their dusting and mineralization of sediments feeding the Syr Darya and Amu Darya rivers.

But the main reason is the incorrect distribution of water resources feeding the Aral Sea

The decline in the water level of the Aral Sea since early 1960s contributed to the release of the bottom of the sea from water

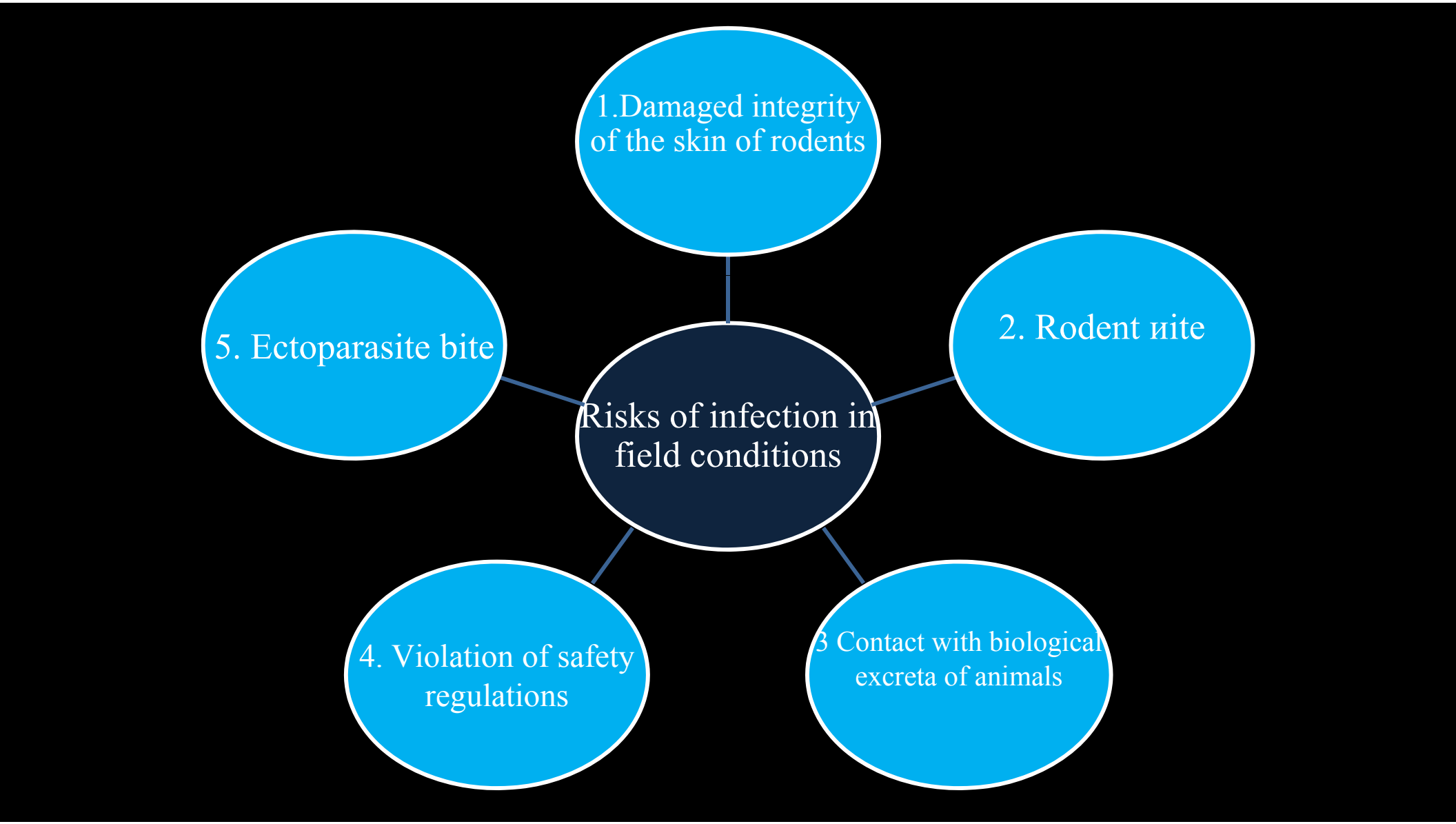
It led to the expansion of natural foci of infection (plague, Congo-Crimean hemorrhagic fever, tularemia, etc.) previously located around the Aral Sea.

BIOSAFETY IN FIELD CONDITIONS

Objects of collection in natural foci of especially dangerous infections

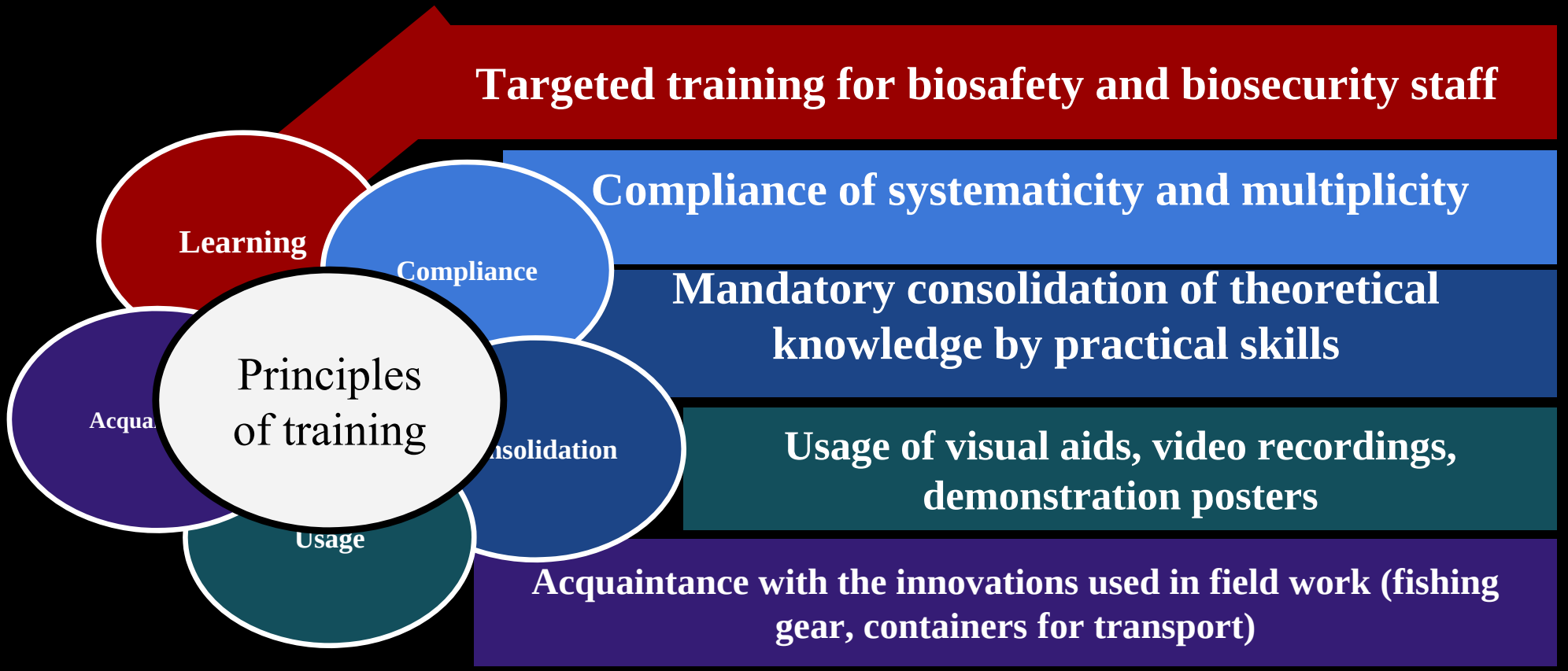
Rodents are reservoirs of infections

Ectoparasites are carriers of these infections


1.Damaged integrity of the skin of rodents
2. Rodent иite
3 Contact with biological excreta of animals
4. Violation of safety regulations
5. Ectoparasite bite
Risks of infection in field conditions

Methods for reducing the risk of infection of employees during field work

Specific	Vaccination of the risk group for each nosological form
Nonspecific	Primary protective barriers (PPE, special adaptations, training and correct practical actions)


Learning
Compliance
Acqua
nsolidation
Usage
Principles of training
Targeted training for biosafety and biosecurity staff
Compliance of systematicity and multiplicity
Mandatory consolidation of theoretical knowledge by practical skills
Usage of visual aids, video recordings, demonstration posters
Acquaintance with the innovations used in field work (fishing gear, containers for transport)

Training of employees

Appropriate use of PPE

Matching by season

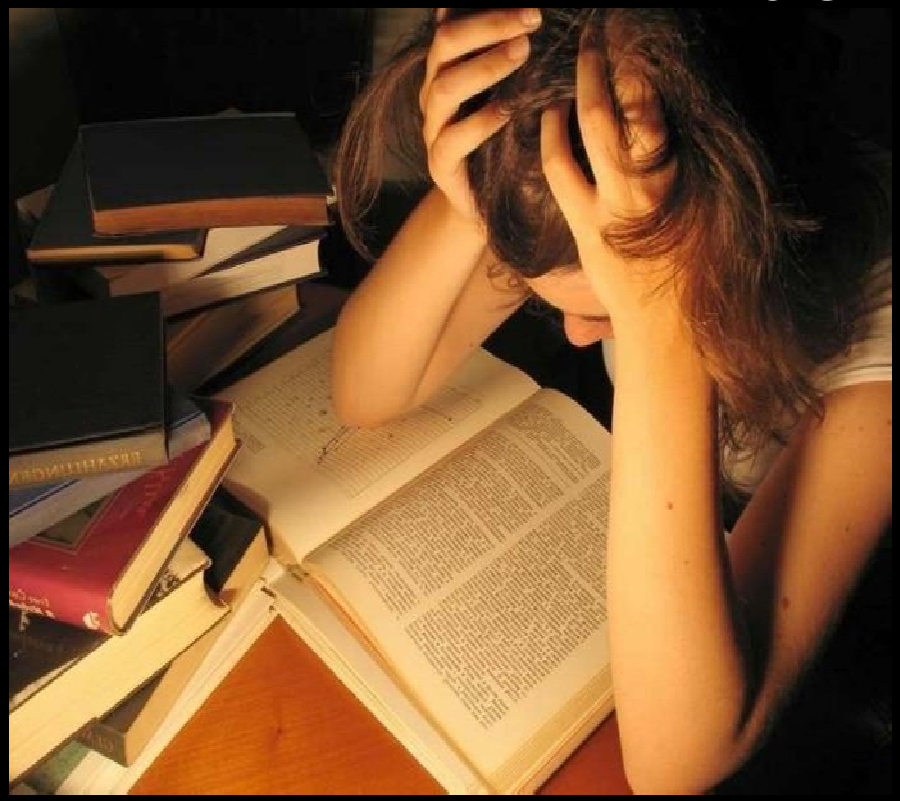
Comfort in thermoregulation

Convenience for work

Simplicity in dressing up and taking off

Matching by size

Conditions to allow to work in field conditions



1. • **Presence of preventive medical examination**
2. • **Vaccination against especially dangerous infections**
3. •**Examination of the anti-epidemic regimen of a specially created commission**

Requirements for fishing gear

1. Convenience in use

2. Tightness of packaging

Fishing gear of rodent

3. Easily processed disinfectants

4. Maintenance of thermoregulation

Ectoparasitic catching equipment

1. Safety in usage
2. With easily treated disinfectants
3. Interchangeability depending on the weather conditions (wind amplification, scorching heat)
4. Tightness of packaging

Use of fishing gear

Strictly for the purpose

Their use depends on weather conditions

Proper disinfection after use

Proper storage

Rules of dislocation in field conditions

Selection of the dislocation (in the places free from the settlement of rodents, predators, insects)

Pre-treatment of dislocation by disinsectants

Field Conditions

- Field conditions are the conditions of residence, work and leisure of employees in the enzootic territories
- Field material are the biological substances collected from the enzootic territories for desk research

Security of the collection of field material

1. Elimination of direct contact with captured rodents or their corpses

2. Avoid contact with biological substances of rodents on fishing gear

3. Avoid bite of ectoparasites using weather conditions and disinsectants, repellents, scaring agents

- Correct isolation of trapped rodents to avoid spreading their fleas

Packaging of materials

Transportation of field material

- Use of packaging containers
- Transportation by special transport
- The cargo is accompanied by trained biosafety and biosecurity personnel
- Tracking of the route

Collection of field material for the Congo-Crimean hemorrhagic fever

- Correct selection of the place of congestion of ticks (potholes, field, meadow, forest plantations, watering)
- Correct selection of survey objects (animals)

- Use of protective clothing
- Using tools to remove ticks from animals
- Transportation of materials

Risks of infection when working on the Congo-Crimean hemorrhagic fever in the field

- 1. A tick bite;
- 2. Crushed tick;
- 3. Spraying of blood;

Training of personnel on disinfection work

Proper preparation of the percentage of disinfectants

Application of disinfectants to their intended use

Knowledge of the algorithm of action in the event of an accident in field conditions

- **First aid and partnership skills**

CONCLUSION

To reduce the risk of infection while working in the field, it is necessary to put mobile groups for each infection separately

THANK YOU FOR YOUR ATTENTION