Brucellosis situation in Mongolia

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Veterinary service focused on handling neglected zoonozes
Livestock population
Brucellosis situation
Diagnostic capacity
Control measures
Challenges
Veterinary service in Mongolia

- Policy - Ministry of Agriculture and Food
- Implementation - Government implementation agency - Department of Veterinary service and Animal Breeding
- Control - State Control Department
Veterinary services focused on zoonozes

- Cross coordination committee 2013 November “One health” center
- Center for communicable diseases by two Ministries- Ministry of Health and Ministry of Agriculture, Food and Industries
- Working group on Brucellosin
- Adaption “Brucellosis strategy in Mongolia 2014-2021”
Number of livestock in 2014

- Goat: 18.35 million
- Sheep: 16.99 million
- Cattle: 2.43 million
- Horse: 2.24 million
- Camel: 0.26 million
Sheep distribution /2014/
Goat distribution /2014/
Cattle distribution /2014/

Map showing the distribution of cattle across different regions in Mongolia.
Horse distribution /2014/
Camel distribution /2014/
Elevation and water sources

Map of Mongolia with elevation and water sources.

River Aimag Boundary

Allevation (meters)
- <1200
- 1200-1500
- 1500-1800
- 1800-2100
- 2100-2400
- 2400-2700
- 2700-3900
- >3900
Brucellosis situation in Mongolia

- Though many infectious diseases are controlled, the cases of brucellosis communicable to humans are increasing, and according to the record of health organization, brucellosis among human infectious diseases ranks after infectious hepatitis.
Until 1990 livestock had been in public ownership and belonged to agricultural farms and state cooperatives. Therefore, losses and diseases of livestock were centrally controlled, and preventive and fighting measures were implemented on the national level including individually owned livestock and animals.

After 1990 ninety five percent of livestock were transformed into private ownership, consequently began to be provided paid veterinary services, and furthermore, the financial possibility to render support by the state became limited. These are the main reasons of the increase of brucellosis cases among livestock and the population.
- *Brucella melitensis* - in sheep and goats
- *Brucella abortus* in cattle
- Camels and yaks can be infected by both
- Both species pathogenic for man
Alive vaccines

- Rev1 Br. melitensis for small animals
- Strain 19 Brucella abortus for cattle

- Use for long period of time
  - 2000-2014
  - 2014-2021
Brucellosis diagnosis

- Rose Bengal test
- CFT
- ELISA
- PCR

Differentiation vaccinated and natural infected animals
Targeted surveillance
Human brucellosis, Mongolia, 1958-2009

Number of cases
Incidence per 10,000

Current zoonoses situation, 2012
## ELISA test 2013-2014 Eastern province

<table>
<thead>
<tr>
<th>Tests Province</th>
<th>Species</th>
<th>2013</th>
<th>2014</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>iELISA</td>
<td>pos</td>
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<tr>
<td>Sukhbaatar</td>
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## ELISA Test 2013-2014

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Brucellosis control

Mass vaccination in animals

• 2010
• 2011
• 2012
• 2013
# Mass vaccination program

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</table>

M – All animals except males (cattle, sheep, goat)
T-only new born

<table>
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<th>Province</th>
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</tr>
<tr>
<td>В</td>
<td>Bulgan, Dundgobi, Gobisumber, Hobsgol, Omnogobi, Oborhangai, Selenge, Tob, Ulaanbaatar, Dornogobi</td>
</tr>
<tr>
<td>Г</td>
<td>Hentii, Dornod, Sukhbaatar</td>
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Challenge

Key questions:

Diagnosis /infected and after vaccination reaction/ C-ElISA/

Treatment strategy /it should be like as TB treatment/

Alive vaccine strain - reverse /research/
- Active surveillance in targeted region
- Financial support
- Diagnostic capacity in local level
- Control system
- Fast diagnostic method for human case
- Treatment strategy
- Epidemiology capacity
- Eradication program
• Science
• Policy
• Implementation
• Maintenance
• Free from Brucellosis
Comments and question

Thank you
The new document regulates relationship between herders whose interests and needs are to keep the livestock healthy, on one hand, and on the other hand, veterinarian’s interest to provide veterinary services.

However, without sound financial support from the government side it is not possible to implement the policy.

Cost effective methods based on realistic assessment of the present situation should be used to implement the brucellosis eradication and control program in Mongolia.
One has to realize that there are socio-economic factors negatively influencing the fight against brucellosis. In addition, there are biological factors with negative influences.