



Report on Mongolian Activities in 2019

The mission of BioRegions International (BRI) is to exchange *knowledge, experience and skills* through personal visits and communications. During the exchange process, participants agree to act on projects to support and improve local economy, education, environment, health, traditional skills/knowledge and the arts. Feedback from projects and conversations provide input for current and future projects. Volunteers from other countries pay their travel expenses to Mongolia.

The 2019 ‘Work Trip’ included the Health Team, the Community Team, and Mongolian staff serving both teams.

Mongolian staff:

Mugi (Munkhsetseg Dorjjanstan) Mongolian Director
Bulga (Bulganzya Tumurbaatar) Staff Translator for Community Team
Mishig Jlgjidsuren, Darkhad Valley Coordinator
Turbat Gochoo, Lead driver and logistics, Bulgan Coordinator
Adza, Head Cook
Sunjee (Sunjidmaa Tsagaan), Ulaanbaatar Coordinator, provided logistical support from Ulaanbaatar

Health Team translators are listed below.

Health Team of medical professionals and students from Mongolia, Sweden, and Montana:

Susan Gibson, Coordinator, Bozeman, Montana, USA
Dr. Hans Ohrling, Internal Medicine physician, Stockholm, Sweden
Simone Ohrling, Psychologist, Stockholm, Sweden
Dr. David Goodwin, resident physician, Family Medicine Residency Program, Billings, Montana, USA
Michael (Mike) Robinson, medical student, Bozeman, Montana, USA
Maral Gombobaatar, medical student from Mongolian National University of Medical Science (MNUMS)
Khantushig (Tom) Bilegsuren, MNUMS medical student
Ariunzaya (Zaya) Jamsranjav, **translator** and MNUMS medical student
Nasanjargal (Naska) Erdene-Ochir, **translator** and MNUMS medical student

Community Team:

Susie Becker, Elders’ Associations and Bozeman (Montana) Senior Center, USA
Rachael Briggs, Sixth Grade Science Teacher, Bozeman, Montana, USA
Dr. Diane Dodd, Veterinarian, New York State, USA

HEALTH TEAM ACTIVITIES

In Hospital of Bulgan Province and at Health Department in Khuvsgul Province

- Provided training to 74 physicians, bag doctors and social workers
 - On depression and suicide in men: Men benefit from having a *Safety Plan* against depression, important to provide psychological guidance to children which they can follow as adults.

- On domestic violence: Interviews of women about domestic violence is an important step towards recognition of the problem. They help create effective policies to combat gender-based violence.
- On physician burnout: Caregivers and their supervisors need to be responsible to obtain adequate rest from the pressures and responsibilities of their jobs.
- Guided a teen through suicide prevention with a survival plan. A psycho-educational meeting became therapeutic, with a safety plan and helpful role playing.

Dental Project: *Do parental dental and nutrition education, dental exams, and fluoride varnish treatments improve dental health for children 2-6 years of age?*

- Established Control and Treatment groups in Ulaan Uul and Renchinlhumbe soums
 - Ulaan Uul
 - Control Group of 15 children and parents, dental exam and parental survey
 - Treatment Group of 17 children and parents, dental exam, parental survey and fluoride treatment
 - Renchinlhumbe
 - Control Group of 11 children and parents, dental exam and parental survey
 - Treatment Group of 23 children and parents, dental exam, parental survey, fluoride treatment
- Provided a toothbrush and toothpaste to each child that participated in the dental project. (The fluoride varnish swabs, toothbrushes, and dental education posters were donated.)
- Project will be repeated in December 2019.

Patient examinations in Darhad Valley Soums

- Ulaan Uul Soum
 - Diabetic Clinic to examine and consult with **22** patients. (16 female, 6 male; 15-86 years old)
 - Two patients had blood glucose over the normal value and were given advice.
 - General examinations for **26** patients (blood pressure, BMI (height and weight), glucose)
 - Advice was given for allergic problems, urinary tract problems, hypertension, hypothyreosis, pancreatitis and fatigue
 - Provided two blood sugar testing devices
- Renchinlhumbe Soum:
 - General examinations for 46 patients (blood pressure, BMI (height and weight), glucose).
 - Conducted the depression survey to be compared to the results of the depression survey conducted by Dr. Zach Meyers in 2008.

Other Health Team Activities

Four-hour women's workshop on Domestic Violence in Ulaan Uul clinic attended by 20 women from the community and 3 healthcare staff. The healthcare staff was encouraged to learn ways to help women and families dealing with abuse. Importance to talking about domestic violence being therapeutic, husbands need support for their own shortcomings to begin to change their attitudes.

Shared about Swedish programs dealing with child abuse: need for parental support, counseling, social alertness when families are in need.

Importance of the role of psychology in primary care teams, because under time constraints, physicians often overlook psychological aspects. Topics include:

- Cognitive behavioral therapies (interactions between thoughts, behaviors, and emotions)
- Neuropsychiatry and brain plasticity (like for autistic children)
- Therapeutic alliances and compliance components of motivational interviewing

2020 Requests from Dr. Uuriinbayar, Director, Khuvsgul Health Department, Murun, Khuvsgul Aimag

- Provide materials for H. pylori testing using the breath test and assist the Health Department in testing.
- Invite a Social Worker from the Khuvsgul Health Department to participate in the December 2019 Dental Project.
- Send BioRegions 2020 summer schedule to him in late October.
- Provide training (by a psychiatrist) to Health Department staff on mental health, depression, suicide and domestic abuse.

COMMUNITY TEAM ACTIVITIES

Cultural Festival in Burentogtokh, 06.22-06.24.2019

BioRegions sponsored the Khotgoid Cultural Festival in Burentogtokh soum. This is the 13'th annual cultural festival sponsored by BioRegions. Burentogtokh governor G. Soninpil, Huvsgul head of the Cultural Division of the Education and Culture Department Batchimeg, and other officials welcomed BioRegions and provided accommodation. The festival included a re-enactment of soldiers of Chiguengo (Chingunjav). returning after battling the Manchu, with 108 horses and riders. The cultural competition featured ten ethnic groups. This is the first annual Khotgoid Cultural Festival and will be continued each year. Teacher Rachael Briggs recognized that one of the most important roles for BioRegions is the honoring of Mongolian culture through festivals.

Mr. Baasansuren, specialist of Cultural Division of Education and Cultural Department in Murun and a key organizer of the festival, requested that BioRegions assist with translation and publication costs for a local history book (his second) and illustrative postcards (Wonders of Khuvsgul). He believes the book and postcards would help tourists understand local culture.

Eastern Taiga, Tsaatan: 07.02-07.04.2019

The team traveled to the Eastern Taiga to present carving tools to 24 Tsaatan families. Funds for carving tools were raised and provided by Max Zimmerman, who visited these families with his family and Mishig in 2018.

East Tsaatan Tribe observations

- They have a two week summer preschool to prepare for school in the soum center town.
- Concerns that boys forego education to work with their deer, more girls attend school and may then leave their home community.
- Concerns about health of both reindeer and people

Elders Project-Susie Becker

- Met with 5 groups of Elders, visited 5 facilities devoted to Elders in Murun, Ulaan Uul and RENCHINLHUMBE, including about 150 elder citizens.
Presented interactive workshops, discussed and compared retirement ages, how to improve balance, maintain strength, and handle arthritis.
- With Murun Elders Association (Mr. Tumurbaatar)
Shared written answers and documents from the Bozeman Senior Center.
Received proposal for long term collaboration including professional exchanges and ongoing information exchange (book and manual exchange, visits to Mongolia, friendship between elders' communities (2-3 soums) and Bozeman elders, pen pals, information sharing and media exposure).
- Met with Head of Citizens Representative for Murun and discussed additional collaboration.
- In Ulaan Uul met with elders in the cultural center, gave exercise books, DVD.
- In RENCHINLHUMBE elders' center (recently modernized), visited White Spring with elders, shared photos and information about Montana.

Conclusions

The Mongolian Elder Associations are well organized and well run. Local lifestyles centered around family and countryside life provide exercise, community activities and social contacts in contrast to Bozeman where there is more social isolation, inactivity and lack of healthy food .

Recommendations

Consider following up on long term collaboration proposal with Tumurbaatar.

Education Project-Rachael Briggs

Teacher Rachael Briggs conducted science workshops to demonstrate active learning for the purpose of increasing student interest and engagement.

Renchinlhumbe workshop

- For 7 teachers of biology, English, and physics.
- Without Wi-Fi could not use media or introductory slide show.
- Teachers wanted hands-on activity examples
- Demonstration included water cycle (evaporation and condensation), and convection cells (ocean currents, Earth's mantle convection currents).
- Teachers were excited and understood the principles, discussed appropriate age groups for each demonstration.

Ulaan Uul workshop

- First workshop with biology teacher and five students from Ecology Club (50 student membership)
 - Shared with Rachael a park under construction featuring recycled tires and requiring monetary participation from the students
 - Used photos to compare Mongolia and Montana, with emphasis on Yellowstone wildlife and the protective role of the US National Park Service
- Second workshop in school library
 - Met with the biology teacher and a first-grade and a third-grade teacher and several elementary school students
 - Streamed video through an iPhone *The Sci Guys: the Naked Egg* <https://www.youtube.com/watch?v=SrON0nEEWmo&feature=youtu.be>. This hands-on activity leads to understanding of osmosis.
 - Learned that Google could be searched for key words.
 - Demonstrated a convection cell with an aquarium, a beaker of ice water, and dye to signify arctic water versus equatorial water.
 - Demonstrated a cloud chamber and condensation/rain making inside a plastic bottle cooled from the outside with ice.
 - Summer vacations reduced participation.

Murun activities

- Request by Otgon-erdene Shinee, Deputy Chairman of Education and Culture for Khuvsgul Province, for BioRegions to help find and invite English teachers to come to Huvsgul and train teachers.
- Workshop
 - Rachael and Munk-Erdene, (a biology teacher whom she met with in Bozeman, Montana), worked with 25 participants in four groups of teachers (biology, physics, chemistry, and elementary level teachers from Department of Education and Culture.

- Introductory slide show.
- Water cycle (evaporation and condensation), nature's uneven heating of soil and water, learned to illustrate with graphs, understanding that land heats and cools faster than water.
- Used convection tubes from Bozeman science class to demonstrate creation of wind. Participants wanted to know how to obtain convection tubes.
- Explained plate tectonics with a model made from paper. Students got to experience 'active' note taking.

Veterinary field notes- Dr. Diane Dodd

Meetings

- Met with Mary Ballenger from VET Net.
- Visited veterinary pharmacies in Ulaanbaatar and Murun (Ganhuyag and Ariunaa).
- In Murun met with head of Human and Veterinary Services, toured diagnostic lab.
- In Burentogtokh met 2 veterinarians and donated medicines and surgical and non-surgical tools.
- In Ulaan Uul met with veterinarians from 4 bags, donated medicines and surgical and non-surgical tools.
- In Renchinlumbe worked with veterinarian Nyamsuren (wife of Mishig). Treated goat kids and lambs with fevers, nasal and ocular discharges, swollen joints, SMZ 960 treatment resulted in rapid improvement.
- In Eastern Taiga met with Tsagaan Nuur veterinarian. She reported there have been no recent positive tests for brucellosis among the reindeer. Ganbat, head of Eastern Taiga Tsaatan said there is difficulty treating sick reindeer for a mysterious disease they cannot diagnose or treat. One herder loses 100 out of 600 reindeer a year to a disease with respiratory signs, weight loss, internal abscesses and sometimes diarrhea or anemia. It may be the same disease found in a lamb and cow in Renchinlumbe.

Medicines and treatments

- Cattle have pasturella.
- Small ruminants have Clostridium shovei bloat and listeria monocytogenes with neurologic symptoms.
- Antibiotics are primarily oxytetracycline and benzathine penicillin. For Dr. Dodd the most valuable antibiotic was SMZ 960 tablets (Sulfameth/Trimeth (SMZ)). It worked with scours, and for an anemic goat with worms.
- Vaccines provided by state free of charge, veterinarians paid to administer.
 - Almost no small animal veterinary service in the countryside.
 - Contagious diseases include Foot and Mouth, PPR pseudorinderpest, African swine fever.
 - Worms
 - Found strongyle eggs from a few animals in RL and Burentogtokh.
 - Ivermectin is the primary dewormer, also Albendazole and Ivermectin Albendazole combination.
 - Probably is resistance to these chemicals based on McMasters egg counts with 88% reducing in egg counts and persistent anemia.
- Increased cancer in humans may be related to ivermectin ingestion.
- Brucellosis: many veterinarians have it and may die young.
- Deworm sheep and goats in spring and fall, external parasite dips are used for ticks after shearing.
- Lyme disease from Ixodes persulcatus and borrelia garinii, afzelii and bavariensis. Not black legged deer tick and Borrelia burgdorferi like we have in the USA.
- No Clostridium Tetani.
- In Khuvsgul Province there are 5.7 million domestic animals, 13 diseases, animals handled 8-10 times a year.

- Wolf predation is common.

Organizations/collaborations

- Khuvsgul Province has 112 state veterinarians, 76 private veterinarians, five veterinary specialists, aimag 1) division of animal hospitals, administration and finance, diagnostic lab
 - Murun veterinarians requested connection with veterinary organizations in Montana or New York for collaboration.
 - Cornell University in New York willing to explore collaborations.
- Vet Net will take any and all equipment, ship from California to Mongolia, contact Mary Ballenger

Education

- Fewer veterinarians being educated and going into practice.

Needs:

1. Primary diagnostic tools and equipment for two or more soums combined as one region.
2. Improving the practical skills of the veterinarians in small animal surgery.
3. Procuring more veterinary equipment for the private veterinary hospitals (horn saws, thermometer).
4. More diagnostic labs with PCR and ELISA capability to document major contagious diseases (in Soviet times there were diagnostic labs in every soum), now just Murun.

Overall impressions

- All animals looked well fed and healthy.
- Lots of overgrazing, partly due to high goat population.
- Better to have high quality regional labs before having labs in each soum
 - Frustration that for infectious diseases local veterinarians need to confirm diagnosis with lab in Murun to receive medications, are responsible for mistakes -animal deaths from a personal misdiagnosis. Herders pay in November, prefer to barter.

BioRegions activities elsewhere in Mongolia

- Healthy Taimen Festival in Henti aimag soums of Binder and Bayan Adraga in cooperation with Mongolia River Outfitters, September
- Help sponsor Matt McKinney and Chris Ryciewicz in meeting with the Freshwater Resources & Nature Conservation Center in Mongolia. Objective is to arrange details for a 5-year MOU with the Center for Natural Resources & Environmental Policy (University of Montana) to enhance capacity of river basin councils and natural resource professionals to engage in natural resource conflict resolution.

In addition to specific project goals, BioRegions International provided multicultural research, education and service field experiences for Mongolian, US, Swedish, French, and Canadian members of BioRegions teams.

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