

Thanks for Your Help for Our 2023 Project...

Extending Control of Two Parasitic Diseases in Kham

The Diseases

- **Taeniasis** (*Taenia solium* tapeworm) and **neurocysticercosis (NCC)** are dangerous and highly prevalent parasitic diseases in Muli County, Liangshan Prefecture, Sichuan Province, China (Kham).
- *T. solium* taeniasis is caused by consumption of raw or undercooked, infected pork.
- *T. solium* taeniasis carriers can cause NCC, a brain disease that can cause debilitating symptoms which can be fatal. See WHO's diagram below, which shows relationship between taeniasis and NCC.

The Opportunity

- **Dr. Li Tiaoying**, Sichuan CDC, Chengdu, is our long-time partner and an expert working on taeniasis/NCC for over 15 years. **During 2022, BLSCP collaborated with Dr. Li on our Taeniasis Treatment Training Project in Muli County to accomplish the first component of effective, sustainable control of taeniasis and NCC in China.** Dr. Li and her team trained a total of 14 rural doctors in Eya and Mairi Townships to treat taeniasis carriers safely and effectively with herbal medicines.
- Based upon the success of our 2022 project, the Sichuan Provincial Finance Department for Public Health has appropriated 5 RMB per each Muli County resident to be used in 2023 by rural doctors in the county for the detection and treatment of taeniasis. With the Muli County population being 130,000, the total amount is 650,000 RMB (~100,000 USD). The rural doctors will receive 2 RMB for each resident screened and 50 RMB for each resident treated. **To optimize the use of the 650,000 RMB, more rural doctors needed to be trained to treat taeniasis carriers with the herbal medicines.**
- Dr. Li still has no budget for training in rural areas. **She has invited BLSCP to continue our collaboration and raise the funding for a 2023 project to extend our 2022 taeniasis training model to four additional townships in Muli County with high taeniasis infection rates.** The funding for the herbal medicines and the treatment equipment will again be provided by the Sichuan Provincial Finance Department, which also has no budget for training in rural areas.
- **Please scroll down for a spreadsheet (using a slightly different exchange rate) showing actual expenses for the project, which was successfully conducted in mid-April 2023. On 4 April 2023, we transferred \$4,861 to Dr. Li, which is 40% of the project cost. We borrowed the other 60% from Dr. Li's research funds. On 20 April 2024, we reimbursed the full 60% to Dr. Li for her to apply to her 2023 research project, "Transmission of *Taenia solium* in Pigs in Tibetan Communities, Sichuan". This research measured the infection rate of swine cysticercosis and analyzed the spatial relationship between cysticercosis-infected pigs and *Taenia solium* taeniasis carriers at study sites.**
- The budget amounts in this flyer are updated in comparison to our previous flyer issued on 24 November 2023, due to (1) an exchange rate that is now 4% more favorable and (2) several new General Use donations that can be applied to this project.

Treatment Training Budget \$12,014
Already Raised \$12,014
Balance Needed \$0
 As of 26 April 2024



Boulder-Lhasa Sister City Project

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Your donation of any amount is important. Kindly give as generously as possible.
 You may donate by credit card to Parasite Medical Program at boulder-tibet.org/paypal.html.
 Checks may be mailed to BLSCP, 776 Cottage Ln, Boulder CO 80304-0758.

The Training

- Shuiluo, Yiji, Ninglang, and Donglang Townships in Muli County are remote, mountainous, sparsely populated, agricultural areas with few roads. Shuiluo Township has 5,989 residents (86% ethnic Tibetan) and 6 villages. Yiji Township has 3,285 residents (61% ethnic Tibetan) and 3 villages. Ninglang Township has 2,217 residents (93% ethnic Tibetan) and 3 villages. Donglang Township has 2,774 residents (99% ethnic Tibetan) and 3 villages.
- In mid-April 2023, Dr. Li and her team trained 16 rural doctors from these townships on (1) all aspects of the two diseases, (2) how to detect taeniasis carriers, (3) how to conduct treatment, including preparation of the herbal medicines, and (4) how to complete treatment of all detected cases.
- The first step is to prepare the areca nut extract on the day before it will be used. After dry areca nut slices are immersed in water for 30 minutes, the tannin is thrown away because it might lead to some gastrointestinal discomforts during treatment. The immersed areca nut slices are then boiled down twice and then simmered for 40 minutes. The first and second decoctions are then mixed. The decoction is kept at room temperature for the next day's use.
- The actual treatment includes three courses, with the amounts calculated according to body weight: (1) peeled raw pumpkin seeds prepared as a smoothie in a high-speed blender, (2) areca nut extract, and (3) a magnesium sulfate solution (a purgative) taken one hour after the areca nut extract. Then the patient drinks 1,000-1,500 ml of warm water.



Dr. Li Tiaoying, Sichuan CDC, training rural doctors in Muli County on treating taeniasis patients with herbal medicines



Chen Xingwang, Sichuan CDC, training on how to prepare a pumpkin seed smoothie

The Impacts

- Suffering from two dangerous parasitic diseases in four townships will be greatly alleviated. Approx. 1,000 (7%) local residents will be treated for tapeworms, including *T. solium*. After receiving the herbal treatment, most of them will be cured and no longer capable of causing NCC in themselves and/or others.
- This innovative, pioneering training can be scaled up in the future from the small geographic area of Muli County to larger ones elsewhere in China and in other countries.

Treatment Training Budget **\$12,014**
Already Raised **\$12,014**
Balance Needed **\$0**

As of 26 April 2024



Dr. Li Tiaoying,
Sichuan CDC

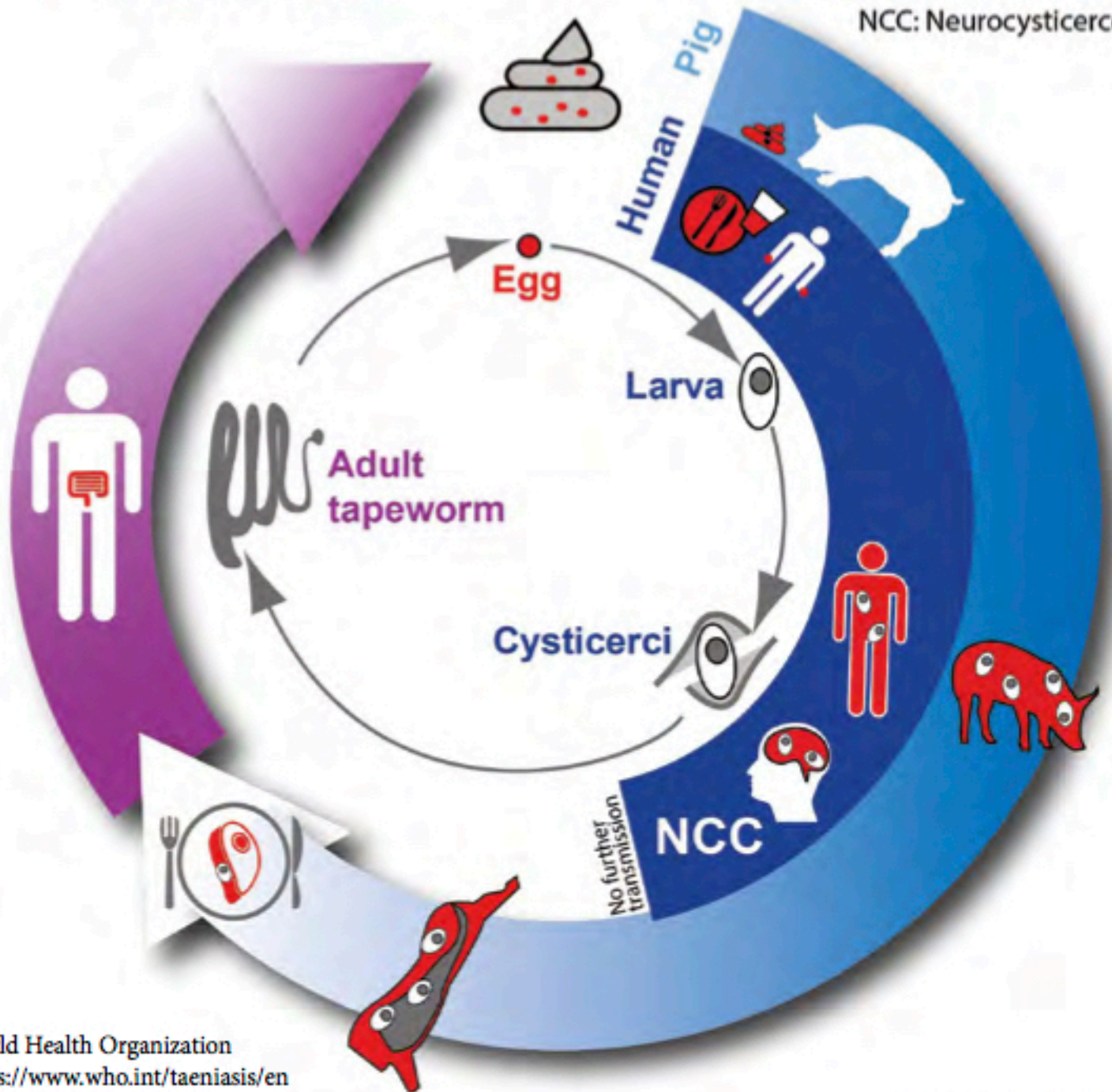


Taenia solium - Transmission and life-cycle

TAENIASIS

CYSTICERCOSIS

NCC: Neurocysticercosis





Ebi Village in Eya Township



Mairi Township seat (administrative center)

Actual Expenses for Taeniasis Treatment Training Project #2, using herbal medicines in four townships			
Item	Cost	Total	
Rental of a 4WD vehicle	145 USD/car/day	145*1*13=1,885 USD	
Accommodations & meals for 5 CDC staff members	58 USD/person/day	58*5*13=3,770 USD	
Allowances for 5 CDC staff members	43 USD/person/day	43*5*13=2,795 USD	
Allowances for 16 trainees	29 USD/person/day	29*16*4=1,856 USD	
Meals for 16 trainees	22 USD/person/day	22*16*4=1,408 USD	
Accommodations for 5 trainees from Yiji and Ninglang	29 USD/person/day	29*5*4=580 USD	
Training materials		97 USD	
Accident insurance	29 USD/person	29*5=145 USD	
	Total	12,536 USD	
Herbal medicines for taeniasis	7.25 USD/case	7.25*1,000=7,250 USD	Funded by Sichuan Provincial
Treatment equipment	1,739 USD/township	1,739*4=6,956 USD	Finance Department

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