



Tick-Borne Infections Council  
of North Carolina, Inc.

**Date:** 17 June 2021

### **Grant application for migrant worker intervention**

#### **Tick Safety for Outdoor Workers, TSOW (pronounced SOW)**

**Purpose of our grant request:** Chatham County Health Department and the Tick-borne Infections Council of North Carolina, Inc are partnering to conduct a pilot intervention to help keep outdoor workers safer from tick bites and tick-borne infections. This initiative will focus on agriculture and other outdoor workers including migrant workers in Chatham County and other nearby counties. Team leaders, field bosses, and first aid workers will be supplied with teaching materials, kits with materials for safe removal of biting ticks, and printed material about tick safety and symptoms of disease in Spanish for workers.

#### **The partnership requesting the grant comprises:**

1. The Chatham County Department of Public Health, Located in Pittsboro, NC. Its mission is “Building a healthy Chatham County through community partnerships and a commitment to equity.”
2. The Tick-borne Infections Council of North Carolina, Inc, is a 501 (c) (3) all-volunteer non-profit started in 2005 whose mission is “Improving the recognition, treatment, control, and understanding of tick-borne diseases in NC. ([tic-nc.org](http://tic-nc.org)) One of our goals is to “educate the public, medical and veterinary professionals, school health nurses, and the public health system, about tick-borne diseases in NC, including risk factors, emerging infections, and prevention.”

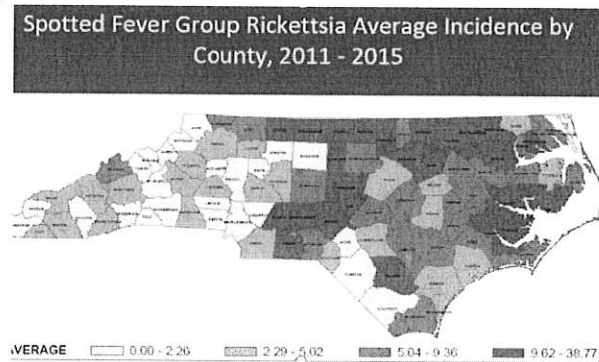
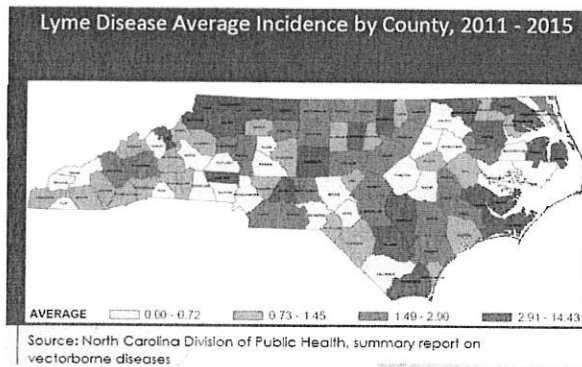
#### **Statement of the problem:**

North Carolina has tens of thousands of farm workers, usually migrant workers across the state during growing and harvesting seasons. Many do not understand the health risks in our state, and anecdotal stories suggest they know little to nothing about disease risk from tick bites. We are not aware of research on this topic. It is well known that outdoor workers of all types are at high risk of tick bites. ([www.epa.gov/sites/production/files/2016-02/documents/tick-ipm-whitepaper.pdf](http://www.epa.gov/sites/production/files/2016-02/documents/tick-ipm-whitepaper.pdf)) Agricultural workers are at risk of acquiring zoonotic infections from disturbing the soil or working with animals. Zoonotic infections account for 61% of infections in humans. (Quant SA et al. *Am. J. Ind. Med.* 56(8):940–59).

Recently, the Tick-Borne Disease Working Group supported by the U.S. Department of Health and Human Services asked the US Congress to address special populations including migrant workers. ([www.hhs.gov/sites/default/files/tbdwg-report-to-congress-2018.pdf](http://www.hhs.gov/sites/default/files/tbdwg-report-to-congress-2018.pdf).)

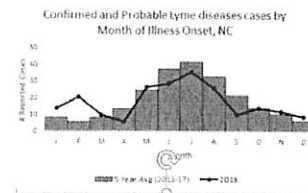
North Carolina, as in most locations in our country, is experiencing a large increase in the tick population along with their geographical locations. There is no part of the state now free of ticks. To date, we have six species known to bite humans. Among them, if infected, there are now at least 12 diseases they can transmit to humans: Spotted fever rickettsioses (SFR which includes RMSF), Lyme disease (LD), the ehrlichiosis, *Borrelia miyamotoi*, anaplasmosis, Southern Tick Associated Rash Illness (STARI), tularemia, Heartland virus, Q Fever, Alpha gal (red meat allergy), tick paralysis, and possibly babesiosis. Some of these can be fatal, others may be chronic. The top two in our state are now the SFRs and Lyme

disease. Lyme disease can now be acquired across the state. In the most north-western counties, up to 25% of blacklegged ticks, the vector of Lyme disease, are infected with the bacteria that causes LD. (Source: Presentation by the state Vector-borne Disease Working Group, 11.15.2019) Up-to-date state data are not available due to the pandemic.



**How we will accomplish our project to reduce the risk of acquiring a tickborne infection:**

- Identify organizations that serve migrant workers in the Piedmont area
- Provide teaching about ticks and TBIs to persons aiding the migrant workers
- Provide first aid kits to leaders in the field
- Provide English/Spanish educational brochures
- Teach team leaders how to report tick bites to the TickEncounter site run by the University of Rhode Island
- Encourage collection of data



A person can get a tick disease **any** time of year.

**Content of 500 kits:**

- Instructions on the correct technique for safe tick removal
- ‘Tick card’ with species information and what to do after a bite if symptoms develop
- Alcohol wipes
- Sharp-pointed tweezers
- Small plastic bag to contain a removed tick so the person can show it to a health care provider if they become symptomatic

**Staff:** volunteers

**Budget and Funding:**

ITEM	GRANT FUNDS	COUNTY/OTHER FUNDS	GRANT FUNDS	COUNTY/OTHER FUNDS	EXPLANATION
	YEAR 1	YEAR 1	YEAR 2	YEAR 2	
Supplies for putting kits	\$2345				

together (kits, tweezers, printed material, etc)					
Travel & Training (mileage reimbursement)	\$280				
Publications – professional printing fees.	\$375				
<b>TOTAL COST</b>	<b>\$3000</b>				

**How this project will help migrant workers and the farming community:**

Education in prevention along with team leaders with first aid kits that provide for safe removal of ticks in the field will potentially reduce absenteeism, tick-borne illnesses, and even the rare risk of death. In addition, Workers' Compensation cases will potentially be reduced.

**How success will be measured:**

This is a first-time project. Thus, measuring success will be challenging since as far as we have found, there are no data to use for before and after comparisons. Little research in the southeastern US has examined health outcomes of exposures of immigrant workers in forestry or fisheries. (Quant SA et al. *Am. J. Ind. Med.* 56(8):940–59). There are also no data on the risk of a migrant worker getting a TBI over, a season of work, for example. ([umash.umn.edu/portfolio/tick-borne-disease-risk-for-agricultural-workers-and-their-families-in-the-midwest/](http://umash.umn.edu/portfolio/tick-borne-disease-risk-for-agricultural-workers-and-their-families-in-the-midwest/)) Risk varies according to species of tick, length attached, location, date, and more.

We expect that risk will decrease not only to the worker but to his or her family as the workers become better informed. We anticipate a reduction in tick bites and TBIs and less related absenteeism. This small intervention does not have the capability to conduct field measurements.

**Timeframe:**

Late summer and fall 2021 into summer of 2022.

**Final report:**

Late summer of 2022.

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