

Memorandum

To: Dedie Wieler
Date: April 16, 2015

From: Michael D. Loberg
Matthew Poole
cc: MVCHI Review Team
TBI Committee Members
Island Health Commissioners
Island Selectmen

Subject: Tick-Borne Illness Grant:
2012 Year-End Progress Report &
2013 Objectives and Budget

The following is the 2012 Year-End Progress Report on the Island's Boards of Health (BoH) Program to Reduce the Incidence and Severity of Tick-Borne Illnesses. This is the second year of a five year program funded by the Martha's Vineyard Community Health Initiative with the aim of reducing the Island's incidence and severity of tick-borne illness (TBI) by 75%. This Report is divided into four parts: 1.) Organization Development, 2.) 2012 Operational Performance, 3.) 2013 Planned Objectives, and 4.) Financials for both 2012 and 2013. Questions and comments may be directed to the authors. This report has received prior approval by the Island's six Health Agents and associated Boards of Health.

1. Organization Development

Grant implementation continues as described in the initial grant proposal, with the workload apportioned between a Steering Committee, a Medical Education Committee, and an Environmental Committee. Committee memberships remain the same as prior year except that Dr. Steven London left the Medical Committee and the Island, and was thanked for his service. Added to the Medical Committee were Dr. Ursula Prisco, director of the Hospital's clinical laboratory, and Anthony Piland, hospital emergency room physician's assistant. Chris Knowles, Wampanoag Tribe Health Agent has also joined the Medical Education Committee while remaining on the grant's overall Steering Committee.

Existing collaborations continued with Sam Telford and Tufts, for which the Committees are extremely grateful, the University of MA Schools of Medicine and Nursing, the MA College of Pharmacy, Malcolm MacNab and the Nantucket Health Department, the Elizabeth Islands, Larry Dapsis and the Cape Cod Cooperative Extension, and Scott Troppy and Catherine Brown of the MA Department of Public Health. Additional 2012 funding was obtained to support two summer students to continue and expand upon the work of last year's Rural Scholars. The interns were Avinash Srhidar, 2nd year UMASS medical students and Hannah Nichols, 2nd year BU public health student.

In 2013 responsibility for program bookkeeping will be transferred to the offices of Dukes County allowing the Boards of Health program to operate under the County's 501(c)(3) status and seek additional, external federal and state funding. The Town of Edgartown is thanked for providing free financial support on behalf of the program's 2011 and 2012 activities. Dukes County has also agreed to provide bookkeeping support without charge.

2. Performance Against 2012 Objectives (as provided in the [2011 Year-End Progress Report](#))

1. Age-specific curricular materials on tick-borne illnesses were provided to the school superintendent's office and have been incorporated into the schools' 2012 kindergarden, 3rd, 6th, and 10th grade health programs. This is an important initiative as children ages 5 to 9 are the highest risk group both on Martha's Vineyard and nationally (see [TBIincidencebyageandgender.ppt](#)).
2. The results of last year's Rural Scholars questionnaire and survey have been evaluated and presented both locally and nationally (Public Health Meeting, San Francisco), are available on the Committee's website (mvboh.org/rural), and have been incorporated into the Committee's local speaker's bureau.
3. In 2012 the Island's Health Agents and Boards of Health (BoH) expanded their new website dedicated to a range of public health issues that readily cross town boundaries (see mvboh.org). The tick-borne illness portion of the site now contains the following seven videos featuring local thought leaders; the videos were produced by Dan Martino of Martha's Vineyard Productions:

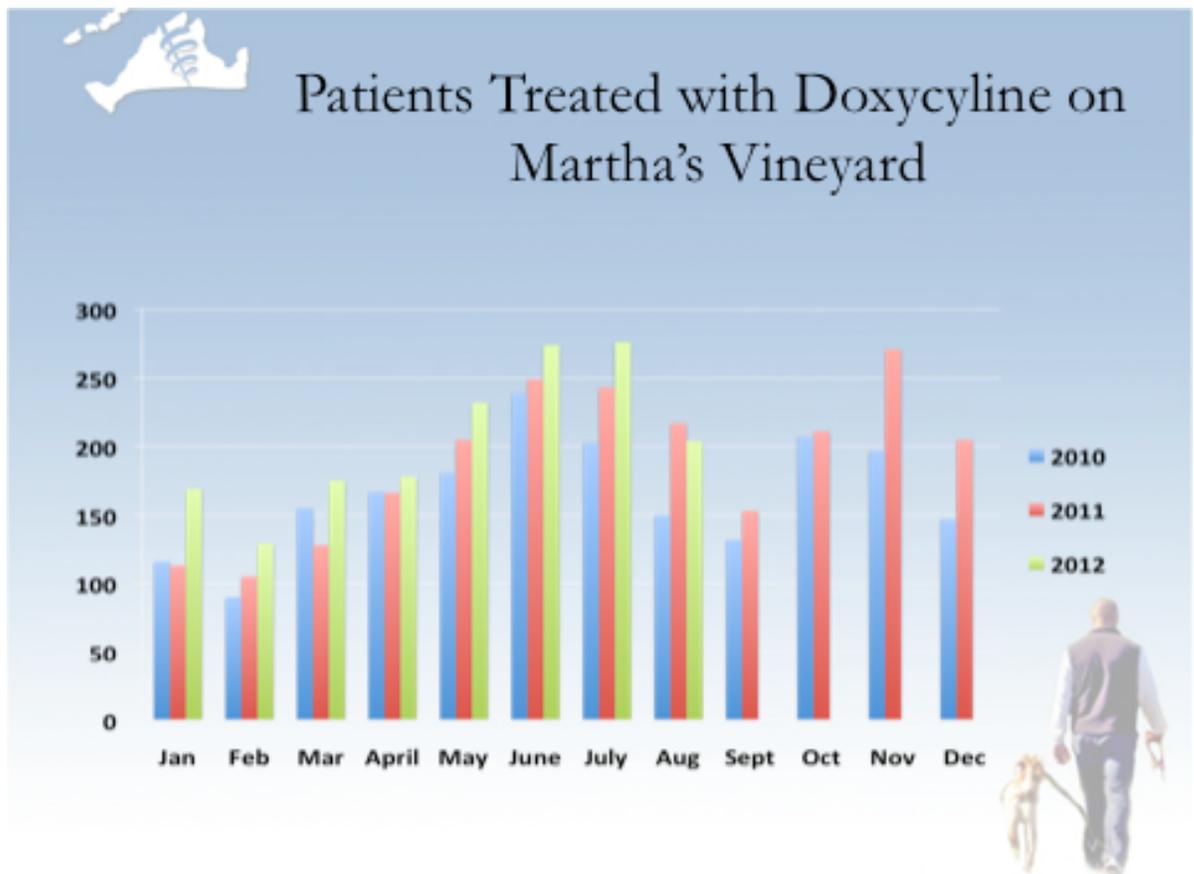
a. Tick-Borne Illness Signs & Symptoms	Drs. Caron, Jacobs, & Stelle
b. Tick Life Cycle	Dr. Telford
c. Tick Protective Clothing	Mr. Poole
d. Tick Exposure Minimization	Dr. Jacobs & Mr. Johnson
e. Tick Pet Protection	Dr. Atwood
f. Tick-Borne Illness Laboratory Testing	Dr. Prisco
g. Rural Scholars Island Findings	Med. Pharm., & Nurs. Stud.

4. Collaborations have been strengthened with Nantucket, Gosnold, Barnstable County, and the Universities of MA and RI. And new educational collaborations have been either initiated or substantially strengthened with Boston University, with the Massachusetts Public Health training programs and with Mount Holyoke.
5. In 2012 the Committee tested a new method of tracking the number of patients being treated on-Island for tick-borne illness. This work was lead by two summer students, Hannah Nichols, a Boston University Public Health Student, and Avinash Sridhar, a second year UMASS Medical Student. The new method provides incidence data in realtime, can differentiate between those patients treated for tick-borne illness who reside on-Island from those who reside off-Island. It also has the ability to identify those patients who are being treated prophylactically versus those who are being treated therapeutically. The new method is based on physician surveys which indicate that greater than 90% of doxycycline prescriptions written on-Island are for the treatment of tick-borne disease.

Top line data are shown in the accompanying table comparing the Island's "confirmed cases" of tick-borne disease reported to the Center for Disease Control (CDC) with the total amount of patients treated on-Island with doxycycline:

<u>Martha's Vineyard Data</u>	<u>2010</u>	<u>2011</u>
CDC Confirmed Lyme Cases	25	34
Total Doxycycline Rxs	1984	2266
Unique Doxycycline Patients	1563	1747

The graph below shows the number of patients treated with doxycycline per month for the years 2010 through 2012:



In 2010, 2106 doxycycline Rxs were dispensed on-Island to 1563 different patients. Note also that this number of patients treated annually on-Island greatly exceeds the 25 “confirmed” Lyme disease patients reported to the CDC. Also, these prescription data may actually underestimate the overall number of patients treated on Island for tick-borne illness as prescription data indicate that one patient, presumably a pediatric patient, may be treated with amoxicillin for every three patients treated with doxycycline.

The student public health team also worked with Dr. Lena Prisco to review the clinical laboratory results from 136 patients who were tested in the hospital in July of 2012 for Lyme disease. Of these, 60 were treated for tick-borne illnesses based on symptoms. Of these 60, only 21 tested positive for Lyme disease, possibly in part because they were

treated early, before the disease progressed and patient antibodies were expressed. Of these 60 patients, 27 resided on-Island, another 18 were off-Island MA residents, with the remaining 15 coming from out-of-state. The Committee's Public Health student Hannah Nichols was one of only 6 state-wide interns selected to present her program to the Massachusetts Department of Public Health. Ms. Nichol's PowerPoint presentation on these data can be found at mvboh.org/rural.

6. A Medical Advisory Committee was created in 2012 consisting of Drs. Yukevich, Caron, Stelle, Jacobs and Prisco, and charged with developing proposed standard-of-care recommendations for the diagnosis and treatment of tick-borne illnesses. An initial discussion was held at Hospital Grand Rounds on June 29, 2012. Another Hospital Grand Rounds discussion was held on February 8, 2013. As part of this on-going discussion, Dr. Lena Prisco prepared a video presentation on clinical laboratory testing which is available for viewing at mvboh.org/lab.
7. Shower head hangers were produced to inform visitors about the need to check themselves for ticks, the medical signs and symptoms of tick-borne disease, and the therapies available. Island health agents offered these hangers to Island hotels, and bed and breakfast establishments at the time of their restaurant inspection. They have been provided as well to doctors' offices and other Island institutions such as libraries. These shower hangers can be viewed and ordered at mvboh.org/shower.
8. An Island Speakers Bureau was assembled, trained and presentation materials produced. Presentations were made in 2012 to the All Island Selectmen's Committee, at Hospital Grand Rounds, to the Martha's Vineyard Commission, at the Tisbury Public Library, to the Dukes County Health Council, to the All Island Boards of Health, to the Island Rotary Club, to Sheriff's Meadow and at the Chilmark Library. This community education outreach is intended to complement the educational materials already on the website and is to be continued and expanded in 2013.
9. In 2012 the Committee intended to pilot within one or more Island grade schools the incubation and release of tick-consuming quails, in place of the existing chick incubation program. This program was not accomplished in 2012 and is to be revisited in 2013.
10. (deer survey: In the summer of 2011 the Environmental Committee also learned about the availability of an experienced and respected aerial thermal imaging service that was available to conduct an aerial census (estimate) of the deer population on Chappaquiddick. Additionally, the committee recognized the economy and opportunity of performing the same deer census on the main island of Martha's Vineyard during the same visit. As a result, Research Aviation & Mapping Science, LLC (RAMS) has been contracted to provide these services for both Chappaquiddick and certain sections of Martha's Vineyard. The thermal imaging flights are planned when advantageous conditions develop in January or February with a written report of findings delivered in the Spring of 2012. This report will be posted on the mvboh.org website after approval by the Steering Committee.)
11. (Trail Management)

12. (Chappy)

13. The Committee's presentation of final recommendations to the All Island Selectmen was projected for early in 2013. It is now being projected for early 2014 to provide time to complete the delayed aerial deer survey and develop the associated deer management recommendations. This will also provide additional time to finalize standard-of-care recommendations for both treatment and laboratory testing, as well as a range of landscape management recommendations.

3. 2013 Objectives

In 2013 the Island's Boards of Health will continue its education efforts. More printed and video materials will be added to the BoH website. Social media capabilities will be added. Web-based materials will be complemented by a broad range of Island-wide public presentations. Additional educational materials will be distributed to Island visitors through lodging and transportation sites. Students and their parents will receive additional printed and video materials. Island-wide diagnostic and therapeutic standard-of-care recommendations will be vetted and promulgated. In-field biology work will be largely completed. Deer and property management recommendations are to be tested, vetted and distributed. Additional grant funding will be sought to support summer interns. These activities will form the basis of a range of Island-wide recommendations to be presented in early 2014. The years 2014-15 will be devoted to gaining an consensus, initiating implementation, and managing and monitoring disease mitigation.

Specific 2013 Objectives include:

1. Production of three new videos to support the school's education programs aimed at grade school and high school students. These videos will use older students as on-camera presenters to their younger peers. Health benefits are anticipated for both the audience and the presenters.
2. Expansion of the Speaker's Bureau to include additional sites and organization. The expansion will also include the training of Portuguese-speaking presenters and expansion of the presentation materials to conclude information obtained from almost 200 people of Brazilian ancestry who completed the rural scholars' questionnaire.
3. Expansion of the printed materials to include additional materials aimed at better meeting the needs of Island visitors. Materials will be developed for the physician offices, buses, ferries, libraries, lodging establishments, visitor centers, walking trails and parks.
4. Migration of the Martha's Vineyard Board of Health website from a Drupal Garden platform onto a Dreamweaver HTML platform. This transformation will include a stronger link with Dukes Country website as well as the individual town sites. The new platform will also better support a broad range of Island-wide healthcare initiatives,

including the Island's MASS in Motion initiatives and Island-wide restaurant inspection results. The board of health website will also support a social network capable of providing notification of new Island-specific disease information along with timely information of new, emergent, healthcare concerns.

5. Expansion of the tick-borne initiative portion of the website (MVBOH.org/tbiooverview) to include the three new grade schools videos listed in Objective 1 above and also:
 - a. a video showing how to best to protect oneself from tick-borne disease while deer hunting;
 - b. a video describing how best to maintain ones property so as to minimize one's exposure to ticks and tick-borne disease;
 - c. a video helping parents protect their children from tick-borne disease;
 - d. a video in Portuguese to help those of Brazilian ancestry protect themselves from tick-borne disease; and
 - e. a video presenting and interpreting the results of the Island's aerial survey of its deer population.
 - f. a comprehensive video for viewing in physician waiting rooms.
6. Creation of a unique system to record in real time the overall monthly prevalence of patients being treated on Martha's Vineyard for tick-borne illness. This system will also seek to record separately the number of patients being treated for the more severe "early disseminated disease" and "late disease" stage. This system will be developed in cooperation and coordination with Island physicians and pharmacists and MA public health officials.
7. Creation and publication of guidelines for the diagnosis and treatment of tick-borne disease within the Island's endemic area. The consensus is to be discussed at hospital grand rounds and at two on-Island meetings of local and regional opinion leaders.
8. Production, in concert with the hospital, of a web-based, TBI-specific, distant learning module (webinar) to help summer physicians manage their TBI patients.

4.0 Financials

2012 Budgeted and Actual Expenses

<u>Expense Categories</u>	<u>2012 Budget</u>	<u>2012 Actual</u>	<u>Variance</u>
Public Education			
Web: Design, Develop, Maintain	\$8,000	\$8,200	
Print: Ads, Posters, Brochures, etc.	\$2,800		
Video: Produce, Publish, Distribute	\$8,200	\$8,625	
Speakers Bureau: Materials & Projector	\$800		
Grade and High School Materials	\$1,100		
Quail Materials	\$1,000		
SUBTOTAL	\$21,900		
CDC Incidence Reporting			
Supplies and Student Support	\$6,500		
Payor Data	0	\$12,000	
SUBTOTAL	\$6,500		
Trail and Property Management			
Sherrif's Meadow Equipment & Personnel	In-Kind		
Tick Surveys (Dick Johnson)	\$6,700		
Supplies	\$350		
Sam Telford	\$13,000		
Permethrin Spraying	\$200		
Hunter Survey	\$200		
SUBTOTAL	\$20,450		
MV Tick-Borne Disease Committee			
Personnel	\$4,000		
Recommendation Dev. & Distribution	\$2,000		
SUBTOTAL	\$6,000		
<u>MVCHI GRAND TOTAL</u>	\$54,850		

2013 Budgeted Expenses

<u>Expense Category</u>	<u>2013 Budget</u>
<u>Public Education</u>	
Web Communications: Design, Develop, Maintain	
Print Publications: Ads, Posters, Brochure	
Video: Produce, Publish, Distribute (TV/Web)	
Speaker's Bureau: Materials and Video Projector	
Grade School and High School Materials	
Quail Incubation and Introduction Program	
<u>SUBTOTAL</u>	
<u>CDC Incidence Reporting</u>	
Supplies and Housing Support for MA Dept of Public Health Summer Intern	
<u>SUBTOTAL</u>	
<u>Trail Management on Cedar Tree Neck</u>	
Sheriff's Meadow Equipment & Personnel	
Tick Surveys	
Personnel (In-Field Biologist; Richard Johnson)	
Supplies	
<u>SUBTOTAL</u>	
<u>Chappy Pilot Program and Up-Island Control Site</u>	
Personnel	
Dr. Telford: Salary and Travel	
Technician: Salary	
Serological Assays (Dr. Telford's Lab)	
Tick Surveys, including residential properties	
Personnel (Dick Johnson)	
Supplies	
Cape Cod Cooperative Program (Larry Dapsis)	
Trail Management	
Sheriff's Meadow Equipment & Personnel	
Tick Surveys	

Personnel (In-Field Biologist; Dick Johnson)	
Supplies	
Other, e.g. permethrin spraying	
Deer Management Program Investigation	
Personnel	
Hunter Survey	
<u>SUBTOTAL</u>	
MV Tick-Borne Disease Committee	
Personnel	
Recommendation Development & Distribution	
<u>SUBTOTAL</u>	
<u>MVCHI GRAND TOTAL*</u>	
* \$51,670 award + \$3,180 carryforward	

Approved:

Harold T. Zadeh
Chairman
Edgartown Board of Health

Michael D. Loberg
Chairman
Tisbury Board of Health

Katherine Carroll
Chairman
Chilmark Board of Health

Trisha Bergeron
Chairman
Oak Bluffs Board of Health

Tim Barnett
Chairman
West Tisbury Board of Health

Jerry Wiener
Chairman
Aquinnah Board of Health