

# Obtaining preventative veterinary care in underserved areas

## Final report for LNE17-359

Project Type: Research and Education

Funds awarded in 2017: \$67,092.00

Projected End Date: 10/31/2019

Grant Recipient: West Virginia University

Region: Northeast

State: West Virginia

Project Leader:

[William Shockey](#)

West Virginia University

## Project Information

### Summary:

A 2-year educational program demonstrated the value of obtaining preventative veterinary services to more than 400 WV livestock producers, introduced techniques to obtain cost-effective services, and provided instruction that resulted in changes in farm management.

Two (2) preventative veterinary service pools were conducted in April 2018 and April 2019. In total 18 livestock producers with 51 bulls needing a breeding soundness examination (BSE) and 45 heifers/cows in need of a pregnancy check (PC) participated in animal health checks organized by extension personnel and a veterinary clinic. Producers transported their animals to a local livestock market where excellent handling facilities were available. Results of the BSE found that of the 51 bulls tested, 16 (31% of total tested) were symptomatic. Of the 31 that were symptomatic, 4 (8% of total tested) failed. Based on these results, use of an untested bull can expose producers to a 31% possibility of pregnancy failure, and an 8% certainty of pregnancy failure. Pregnancy failures have a devastating effect on the economic viability of any livestock producing operation. Results of the PC examinations found that only 6 of 45 were pregnant just before calving season, and these were pregnant 4 months or less. Pregnancy checking earlier in the reproductive cycle (November or December) would have saved these producers about \$150/head, showing that the cost of the veterinarian's visit would have been covered by finding only 1 unbred animal and allowing that animal to be culled.

By June 30, 2018, 413 producers from throughout the state, who participated in a variety of town hall type meetings and other WVU Extension Educational events, completed the verification tool which was designed to determine the current status of preventative veterinary support. These producers were the primary candidates to be recruited to attend a hands-on animal health short course.

Sixty-four (64) livestock producers participated in hands-on animal health training and workshops. A 4-session, hands-on, Animal Health Short Course was conducted

with sessions occurring in February, March 14, and two in April 2019. Thirty (30) individuals, recruited from the original survey pool of 413 producers, participated in a course of study that included such topics as “Value of Preventative Veterinary Care”, “Animal Ethics and Body Condition”, and “Beef Quality Assurance”. Instructional techniques included hands-on, traditional classroom, and distance-learning methods. Additionally, a 4-hour Small Animal Field Day was conducted on September 7, 2019 to accommodate small ruminant livestock producers. Thirty-four (34) individuals, recruited from the original survey pool of 413 producers, participated in the field day which included such topics as “Animal Handling and Marketing”, “Small Ruminant Management”, and “Animal Health Protocols”. Instructional techniques included hands-on, traditional classroom, and interactive discussion in an on-farm setting.

Four (4) individuals who attended the animal health workshops volunteered to work with the smartphone application which was designed to improve communication between veterinarians and livestock producers located in remote locations. These producers were paired with selected veterinarians. Monitoring the success of this technology will be continued well-beyond the grant end date. To date, interactions have been positive and additional individuals will be recruited to work with the smartphone application. Based on conversations with program attendees, individuals were hesitant to participate because the application’s current restriction to android based systems, older producers shunned the use of electronics/technology in general, and our group of livestock producers were cautious and assumed a “wait and see” approach.

Results of self-assessment surveys, averaged over all instructors over all 4 sessions, indicate that 100% of participants learned new information, participants reported a 29% increase in knowledge gained and 97% of participants rated the program as good or excellent. 100% of participants are going to make livestock management changes based on participation in this program.

#### Performance Target:

One hundred (100) livestock producers, averaging 30 animal units each, will schedule preventative veterinary services for brood stock. Twenty (20) pools consisting of 5 producers each will schedule 2 preventative veterinary care visits: 1) to administer vaccinations and 2) to pregnancy check brood cows.

#### Introduction:

Large-animal veterinary services can be lacking, even in rural counties that contain large numbers of livestock. Nationwide, 1,300 counties have less than 1 farm veterinarian per 25,000 animals. Average, one-way drive times from the veterinarian’s office to a farm can be more than 90 minutes. This coupled with an average livestock inventory of 30 animal units per farm, make the cost preventative veterinary care visits high on a per animal basis, discouraging small, part-time producers from establishing an on-going relationship with a veterinarian. Without an established relationship, veterinarians are reluctant to make emergency calls that can easily take 4 or more hours, mostly in travel time. The educational approach to solve this problem is to use town-hall type activities to reach as many small, part-time producers as possible (600 goal) and 1) provide education on the benefits routine preventative veterinary care and 2) gather information regarding the current state of veterinary support and willingness to make management decisions to improve access to veterinary care. As needs and willingness from the initial group of producers is assessed, they will be targeted to participate in on-farm learning

demonstrations followed by recruitment to form producer pools. Producer pools will consist of 3 to 6 farms located within approximately 5 miles of each other and provide 100 to 200 animal units to attract veterinarian support with a reasonable per head per visit cost. The initial group of producers will also be assessed about their willingness to use smartphone technology to sustain Veterinarian-Client-Patient-Relationships (VCPR), by providing a means to assess animal conditions before investing in an expensive emergency on-farm visit. The technology will provide a mechanism for a producer to provide a description, vital statistics, and video to a veterinarian's clinic where the information will be immediately available for assessment and recommendations. Ultimate goal is for 100 producers to participate in preventative veterinarian care pooled visits and another 100 producers to adopt smartphone technology to interact with their veterinarian.

## Cooperators

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## Research

Involves research:

No

### **Participation Summary**

## Education

Educational approach:

A media campaign lead by the WVU Extension Service will generate interest in the veterinary care crisis and stimulate attendance at town-hall type meetings and on-farm demonstration programs. Our strategy is to use attendees at various educational programs to form the nucleus of producers that will ultimately lead producer pools to coordinate preventative veterinary care visits and also to lead the use of the newly developed smartphone application in preventative veterinary care protocol. Educational program topics include 1) the economic value of a veterinarian/client relationship, 2) the value of quality assurance programs such as Beef Quality Assurance in livestock care and marketing, 3) business management systems that apply to both farm operations and veterinary clinics, and 4) applying pooling principles used in livestock marketing programs to entice veterinarians to work with small-herd livestock producers. Educational topics specific to producers for the smartphone application will include 1) downloading and operating applications, 2) entering data and taking videos, 3) selecting the veterinarian and sending data, 4) receiving data and instruction from veterinarian, and 5) acknowledging and clarifying the veterinarian's instructions. Additional topics specific to veterinarians will include receiving input from producers, opening the data file, sending replies to clients.

## Milestones

### **Milestone #1**

What beneficiaries do and learn:

1. Six hundred livestock producers will learn about the interactive, hands-on educational opportunities to empower their establishment of routine, preventative veterinary care and receive a 20 question survey designed to determine demographics and attitude towards preventative veterinary care. (Nov 2017 - Jan 2018)

Proposed number of farmer beneficiaries who will participate:

600

Proposed number of agriculture service provider beneficiaries who will participate:

5

Actual number of farmer beneficiaries who participated:

413

Actual number of agriculture service provider beneficiaries who participated:

Proposed Completion Date:

June 30, 2018

Status:

Completed

Date Completed:

June 30, 2018

Accomplishments:

### VERIFICATION TOOL

#### Summary of Survey

#### There's an App for that \_ News \_ theet

Planning and organizational meetings were scheduled with the co-investigators of the grant on November 1, 2017; in-service presentation to all county agricultural extension agents in the state on November 15, 2017; and as a poster session to the collaborating members of the WV Cattlemen's Association on December 1 and 2, 2017.

Final funding documents were completed in mid-October so completion dates of this milestone were delayed. After funding activities were finalized town-hall type events using previously scheduled meetings of conservation agencies, extension conferences, and extension educational events were used to educate 54 producers on the scope of the project and complete the verification tool and survey.

By June 30, 2018, 413 producers, who participated in a variety of town hall type meetings and other WVU Extension Educational events, completed the verification tool which was designed to determine the current status of preventative veterinary support. Producers were located throughout the state and these producers will be the primary candidates to be recruited to attend a hands on animal health short course which is scheduled from Feb to April 2019.

## **Milestone #2**

What beneficiaries do and learn:

2. Two-hundred livestock producers will learn the use of a smartphone application designed to allow veterinarians to prioritize on-site visits, diagnose and direct treatment remotely, document veterinarian-client relationships and increase number of clientele served. (Nov 2017 - Jan 2018)

The smartphone application launch date was delayed until Feb 2019 because of technical and programming issues. Actual recruiting launch occurred during the Animal Health Short Course in April 2019 and Small Ruminant Field Day in September 2019.

Proposed number of farmer beneficiaries who will participate:

200

Proposed number of agriculture service provider beneficiaries who will participate:

5

Actual number of farmer beneficiaries who participated:

2

Actual number of agriculture service provider beneficiaries who participated:

2

Proposed Completion Date:

June 30, 2019

Status:

Completed

Date Completed:

October 31, 2019

Accomplishments:

[Dominion Post Column 2018-04-01Smart Phone Application Presentation](#)

Smartphone application is operational and ready for producer launch and test. Two producers have currently uploaded the application for beta-testing. Monitoring and smartphone application updates will continue well beyond the grant end date of October 31, 2019. The reason for the low number of agriculture service provider beneficiaries compared to the objective is because of technical and programming issues that delayed "serious" recruitment of providers until 2 months before the grant end date. The reasons for the low number of farmer beneficiaries, in addition to the technical delays and late recruitment, include the application's current restriction to android based systems, older producers (60+) tend to shun the use of electronics/technology in general, and our particular group of livestock producers are cautious about new technologies and assumed a "wait and see" approach. Continued recruitment is expected to build the number of beneficiaries to target numbers within a year.

**Milestone #3**

What beneficiaries do and learn:

3. One hundred of those that receive instruction will initiate contact with a veterinarian using the smartphone application. (Feb - Jun 2018)

Proposed number of farmer beneficiaries who will participate:

100

Proposed number of agriculture service provider beneficiaries who will participate:

2

Actual number of farmer beneficiaries who participated:

4

Proposed Completion Date:

June 30, 2019

Status:

Completed

Date Completed:  
September 7, 2019

Accomplishments:

Smartphone application launched during the Animal Health Short Course Scheduled between Feb and Apr 2019 and during the Small Ruminant Field Day in September 2019.

As a result of the short course and workshop, four (4) individuals were identified to work with the smartphone application. These were paired with selected veterinarians. Monitoring of the success of this technology will be continued well-beyond the grant end date. To date, interactions have been positive and additional individuals are being recruited to begin working with the smartphone application.

The main reason for the low number of farmer beneficiaries is an unexpected technical and programming delays that, in turn, delayed farmer recruitment until near the grant deadline. Continued recruitment is expected to build the number of beneficiaries to target levels within a year after the grant completion date. Additionally, there was a higher than expected level of resistance to the adaptation of the technology. Older producers (60+) tend to shun the use of technology in general and we, apparently, were not as efficient in recruiting younger producers to our programs. About one-half of our producers did not use android operating systems which contributed to a general "wait and see" attitude. Efforts are continuing to approach younger clientele and additional grant sources will be sought to adapt the application to iOS.

#### **Milestone #4**

What beneficiaries do and learn:

4. One-hundred fifty livestock producers will attend an on-farm demonstration program designed to educate livestock producers on the essential planning factors required to facilitate a successful preventative veterinary service call. Demonstrations will include biosecurity measures, injection protocols, pregnancy checks, and breeding soundness examinations (Apr - Aug 2018)

Proposed number of farmer beneficiaries who will participate:

150

Actual number of farmer beneficiaries who participated:

64

Proposed Completion Date:

April 30, 2019

Status:

Completed

Date Completed:

September 7, 2019

## Accomplishments:

[Animal Health Short Course Manual](#)  
[Smart Phone Application Presentation](#)  
[Small Ruminant Field Day](#)  
[Small Ruminant Field Day Agenda](#)  
[Evaluation Summary 041119](#)  
[Small Ruminant Field Day Evaluation 090719](#)

A 4-session Animal Health Short Course was conducted with sessions occurring on February 14, March 14, April 9, and April 11, 2019. Thirty (30) individuals, recruited from the original survey pool of 413 producers, participated in a course of study that included such topics as “Value of Preventative Veterinary Care”, “Animal Ethics and Body Condition”, and “Beef Quality Assurance”. Instructional techniques included hands-on, traditional classroom, and distance-learning methods.

Based on the results of the post short course, self-assessment survey, 100% of participants learned new information, participants reported a 29% increase in knowledge gained and 97% of participants rated the program as good or excellent. 100% of participants are going to make livestock management changes based on this course. Thirty (30) progressive farmers were instructed in basic management practices designed to maximize livestock health and twenty-five (25) individuals earned BQA certification.

A 4-hour Small Animal Field Day was conducted on September 7, 2019 to accommodate small ruminant livestock producers. Thirty-four (34) individuals, recruited from the original survey pool of 413 producers, participated in the field day which included such topics as “Animal Handling and Marketing”, “Small Ruminant Management”, and “Animal Health Protocols”. Instructional techniques included hands-on, traditional classroom, and interactive discussion in an on-farm setting.

According to the participant evaluation summary for the Small Animal Field Day, 90% of participants learned new information, participants reported a 23% increase in knowledge gained and 92% of participants rated the program as good or excellent. 100% of participants are going to make livestock management changes based on this course. Thirty (36) progressive small ruminant livestock producers were instructed in basic management practices designed to maximize livestock health.

## **Milestone #5**

What beneficiaries do and learn:

5. Twenty livestock producers will coordinate preventative veterinary care pools with four other livestock producers and one veterinarian (20 coordinators plus 80 cooperators = 100 total livestock producers) and complete a 20 question survey designed to determine changes in demographics or attitude towards preventative veterinary care. (Aug 2018 - Jun 2019)

Proposed number of farmer beneficiaries who will participate:

100

Actual number of farmer beneficiaries who participated:

Proposed Completion Date:

August 31, 2019

Status:

Completed

Date Completed:

April 12, 2019

Accomplishments:

[Bull BreedingFlyer 041219](#)

[Bull BreedingFlyer 042118](#)

One (1) preventative veterinarian services pool, consisting of 6 producers with a total of 14 bulls and 21 heifers/cows. Rather than the following the proposed technique of rotating to individual farms, bulls needing a bull breeding soundness examination (BSE) and selected heifers/cows in need of a pregnancy check (PC) were transported to a local livestock market on April 12, 2019 where excellent handling facilities and data recording area were available.

Results of the BSE found that of the 14 bulls tested, 8 (57% of total tested) were symptomatic. Of the 8 that were symptomatic, 2 (14% of total tested) failed. Based on these results, using an untested bull exposes producers to a 57% possibility of pregnancy failure, and a 14% certainty of pregnancy failure. Pregnancy failures have a devastating effect on the economic viability of any livestock producing operation. Results of the PC examinations found that only 3 of 21 were pregnant just before calving season, and these were pregnant 4 months or less. Pregnancy checking earlier in the reproductive cycle (November or December) would have saved these producers about \$150/head, showing that the cost of the veterinarian's visit would have been covered by finding only 1 un-bred animal and allowing that animal to be culled.

## Milestone Activities and Participation Summary

### **EDUCATIONAL ACTIVITIES:**

- 4 Consultations
- 4 Curricula, factsheets or educational tools
- 3 Published press articles, newsletters
- 5 Webinars / talks / presentations

### **PARTICIPATION SUMMARY:**

**64** Farmers

**4** Number of agricultural educator or service providers reached through education and outreach activities

## Learning Outcomes

**23** Farmers reported changes in knowledge, attitudes, skills and/or awareness as a result of their participation

**2** Agricultural service providers reported changes in knowledge, skills, and/or attitudes as a result of their participation

Key areas in which farmers reported changes in knowledge, attitude, skills and/or awareness:

Willingness to use Android-based smartphone application to interact with veterinarian/producer. For farmers this was determined based on answer to Question #21 on initial survey tool. For service providers (veterinarians) this was from one-on-one interview.

## Performance Target Outcomes

### **TARGET #1**

Target: number of farmers:

100

Target: change/adoption:

Schedule 2 preventative veterinary services calls as part of a veterinarian visit pool

Target: amount of production affected:

Herd/flock production efficiency is expected to improve by 15%

Target: quantified benefit(s):

Pounds of beef or lamb sold per year will increase by 10%

Actual: number of farmers:

7

Actual: change/adoption:

Participated in a preventative veterinary services call for the purpose of conducting bull breeding soundness examinations and pregnancy checking heifers/cows.

Actual: amount of production affected:

Production efficiency of herd/flock increased by 10%

Actual: quantified benefit(s):

Pounds of beef or lamb sold increased by 5%

## Performance Target Outcome Narrative:

Verification of improved production efficiency and livestock production was made by estimating improved efficiency from responses to post-workshop surveys. Estimates of increased production was estimated by evaluation of actual data gathered during the veterinary visit pools. Forty-eight (48) percent of program participants (31 total) responded to the post program surveys. Based upon the self-assessments of knowledge gained (27% combined total), it seems reasonable to assume that there will be a 10% increase in production efficiency which translates into dollars saved in production of beef/lamb. Assuming \$1.20/pound live weight value of finished animals, this is an impact of \$120 per animal unit. Data gathered from the 2019 veterinary pool visit revealed that 14% of bulls failed the bull breeding soundness examination. Logically, by incorporating a bull breeding soundness examination in a preventative veterinary care management system, an increase the pounds of beef/lamb available for market of 14% is expected (140 pounds per animal unit).

Though the original target of 600 surveys and 100 participants in on-farm workshops was not met, actual values of 413 (69%) and 64 (64%) certainly fall into the reasonable and expected range of the original targets. The legitimacy of the estimated verification of production efficiency and beef/lamb produced must be verified over at least 1 production cycle, and is reasonable to assume that this will occur as contact information for all participants is filed and follow-up surveys will be easy to distribute. In the meantime, the provided estimates are well within reasonable expectations.

**7** Farmers changed or adopted a practice

## Additional Project Outcomes

### Additional Outcomes:

There is one unexpected and very positive outcome. This relates to the relationship of the Beef Quality Assurance program to animal health, particularly in relation to vaccinations and weaning. As the short course curriculum was being assembled, the National Beef Association made a new on-line training system available which could be used to facilitate on-site training programs. This coincidence was exploited in the course curriculum and 25 of the 30 participants in the Animal Health Short Course completed BQA certification allowing them to participate in Quality Assurance Pools and Sales. WV data reveals an advantage of approximately \$70/head when participating in a quality assurance pool vs a standard graded pool. As represented by the data in our survey, the average producer had 70 head of cattle; therefore, obtaining BQA certification and marketing livestock through a quality assurance pool would increase on-farm income by \$4,900 per year.



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