

## **NPHIC Award Submission**

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Heart Disease & Stroke Prevention

Chronic Disease Prevention & Control Branch

### **Title of Entry: Blood Pressure Measurement Quality Improvement Program**

#### **Project Background Summary**

##### *Background and Research:*

In September 2012, representatives from the Center for Health Advancement, the Chronic Disease Prevention and Control Branch (CDPCB) and the Center for Local Public Health began discussions on implementing a statewide blood pressure control standardized measurements and protocols blood pressure training and surveillance program. After researching West Virginia's and other state blood pressure training programs, as well as Shared Care, Inc.'s online program, the planning committee chose to contract with Shared Care, Inc. for development of the blood pressure training program for Arkansas. The on-line training offers one-hour of CME and the program is designed for use in class instruction, as an interactive DVD and as an online training tool with pre/post testing and customized specifically for Arkansas health providers.

Hypertension is a major risk factor for heart disease and stroke and Arkansas's prevalence among adults is 48.3%, (almost half of the adult population) according to the 2008 NHanes like Arkansas Cardiovascular Health Examination Survey (ARCHES). ARCHES data showed that only 75% of those with high blood pressure are aware of it; of these, only 66.8% are on treatment; and of these, only 59.5% are adequately controlled. Thus, the overall blood pressure control rate in the state is less than 39.6%.

Accurate and reliable blood pressure measurement is the key to hypertension detection and management. For the last 30 years health professionals and others have repeatedly shown a lack of basic knowledge, skills and performance by those who measure blood pressure in clinics as well as those who measure blood pressure for health screenings. This can be attributed to a lack of standardized training for health care professionals and failure to retrain to mastery of the knowledge and skills required to measure accurate blood pressure.

The overall goal of the self-paced training is to bring health professionals up-to-date on the latest standards of care for blood pressure measurement. Completion of this training improves the accuracy and reliability of blood pressure readings and empowers the learner to help reduce patient risk from uncontrolled high blood pressure. Lowering blood pressure is one of the most cost effective interventions to reduce strokes, heart attacks and deaths due to cardiovascular disease.

Additionally, the program was developed to prepare 89 of the Arkansas Department of Health's local health units (LHUs) health professionals for the 2014 blood pressure surveillance initiative to capture a statewide sampling of 1157 applicant's blood pressure readings. Walmart gift cards were purchased to be given to participants after completion of the survey and blood pressure readings for their time and expense for participating in the surveillance project. This blood pressure surveillance began in 2014 after the LHU health professionals were trained on the on-line Omron 907XL blood pressure device and passed the on-line Blood Pressure Measurement Quality Improvement training course.

*Materials Used:*

- Blood Pressure Measurement Quality Improvement Program DVD and A-Train/Shared Care, Inc. on-line web-based training that includes one-hour of CME
- A-Train on-line tutorial on the use of the Omron 907XL blood pressure device provided to LHUs
- The Omron 907XL tutorial and Blood Pressure Measurement Quality Improvement training can be found on [https://ar.train.org/course #1046249](https://ar.train.org/course#1046249)
- Arkansas Department of Health Hypertension Measurement website (developed in 2013)  
<http://www.healthy.arkansas.gov/programsServices/chronicDisease/Pages/ArkansasBloodPressureMeasurementQualityImprovementProgram.aspx>
- The Arkansas Department of Health's Director's Letter
- LHU protocols for surveillance initiative
- ADH Common Customer blood pressure surveillance data field
  - This required members of the planning team working with our IT division staff to add the data fields needed for the blood pressure surveillance.

*Planning:*

The overall goals of the self-paced training and surveillance are 1) to bring health professionals up-to-date on the latest standards of care for blood pressure measurement and 2) to help reduce patient risk from uncontrolled high blood pressure. Participants will be able to follow AHA guidelines and identify/discuss the impact on accuracy of blood pressure readings related to: equipment/environment/observer, preparing the client, two positioning errors and 2 observer errors

The communication strategy includes:

- Endorsement by the ADH Director in his Friday letter

- On-line announcement by A-TRAIN and articles written and posted in partner's newsletters
- By email from the Center for Local Public Health to all LHUs
- By email or in meetings with partner and coalition organizations
- Provided on-line information and DVDs for training purposes to Arkansas Clinical Transformation Collaborative primary care practices
- Abstract course poster application was submitted by Shared Care, Inc.'s medical advisor and primary author and program developer to the American Society of Hypertension (ASH) that was accepted and presented at their annual meeting in May 2014.

The on-line training is available on the ADH A-Train website until November 2014 and DVDs are still being marketed at every opportunity until supply is no longer available.

*Execution:*

- Executing the actual DVD and course required constant communication with Shared Care, Inc.'s developers and meetings with our ADH planning committee
- ADH planning committee member worked with the ADH Communication Office with development of the DVD cover design and the website design for the project
- Time lines were developed for execution of the training course
- The CME process required specific course detailed descriptions, language and approval. Issuing CME certificates to participants requires on-line monitoring of participants scores of at least 80%
- Posting on A-Train required specific course details and documentation
- Specific LHU protocols and interview questions were developed for the blood pressure surveillance project
- ADH Common Customer data fields were developed to capture demographic and blood pressure information data once the surveillance project began by the interviewer and health professional

The on-line and DVD course include the following elements:

- Participants signed onto the training site at their leisure. They could return to the training as needed till training was completed.
- Pre-test and post-test performance and knowledge evaluations were the same and included:
  - The ability to read and interpret audiovisual recording of 3 BP examples.
  - A criterion based written assessment.
  - 9 modules: as they were completed there were review questions and the ability to review the just completed module.

After completing the modules, the post-assessment and course evaluation, a certificate of completion could be printed and stored on the website.

*Budget:*

### **Course Development & DVD**

Shared Care Inc. Contract	\$41,500.00
1 hour of CME Certification per participant	\$ 1,700.00
Total	\$43,200.00

### **Surveillance Expense**

100 Omron 907XL Blood Pressure Devices/cuffs	\$39,700.00
1157 Walmart Gift Cards @ \$20.00	\$23,140.00
Surveillance sampling frame of 195 households	\$ 1,200.00
Measuring Tapes for arm circumferences	\$ 555.00
Total	\$ 64,595.00

**Grand Total for Initiative** **\$107,795.00**

### *Results:*

The Blood Pressure Measurement Quality Improvement Program shows:

- N = 159 started/138 completed. Time = 59 min.
- RN = 61%, LPNs = 23%, Public Health Nurse= 15%
- Pre-test criterion based knowledge score 55%
- Post-test score = 89%.
- All learning objectives were met

Feedback on the program by participants stressed that they would strongly recommend this training to other colleagues.

e.g. "I have been doing BP for 37 years and doing it wrong"!

Strengths of the training:

- Teaches to AHA guidelines
- Updates can be done at any time by anyone in the program
- Standardized presentation: All participants get the same definitions. Immediate feedback with each knowledge module and ability to repeat till mastered

Evaluation summary:

Participants were asked to rate the degree to which the educational goals were met (1 = strongly agree, 2= agree, etc.):

- 50% checked strongly agree

- 50% checked agree
- 142/143 thought the course was free of commercial bias

The blood pressure surveillance portion of the program is being completed at the time of this submission and results of the survey will be available within the next few months.