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**DATE:** September 30<sup>th</sup>, 2016  
**TO:** Charles Kistler, First State Community Action Agency  
**FROM:** Daniel Bausch and David Carroll, APPRISE  
**SUBJECT:** Findings from In-Depth Interviews of RRHACE Healthy Home Clients and First State's Healthy Homes Assessor

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The purpose of this memo is to furnish First State Community Action Agency (First State) with findings from in-depth interviews conducted by APPRISE for the Healthy Homes component of the Repair Replace Heaters and Conserving Energy (RRHACE) program. APPRISE staff interviewed recent recipients of Healthy Homes services to ask them about their experience with the program, the potential health and safety hazards that were identified in their homes, and their interactions with First State staff and subcontractors. In addition, APPRISE staff interviewed First State's Healthy Homes Assessor to discuss how clients are identified for Healthy Homes, the hazard scoring process, service delivery, and how performance is monitored and assessed.

These interviews are part of a comprehensive Process Evaluation described in the APPRISE memo submitted to First State on 12/21/2015. The purpose of this Process Evaluation is to provide First State and the Delaware Department of Health and Social Services (DHSS) with information to assess whether the program model is meeting the stated objectives, to confirm if protocols and procedures are being successfully implemented, and to identify any barriers to service delivery that need to be addressed through program modifications. This memo provides findings related to the RRHACE program's Healthy Homes assessment and services.

## **I. RRHACE and Healthy Homes Program Description**

The RRHACE program is designed to provide eligible low-income Delaware homeowners with a customized set of free services that match each household's needs. Those services include the following:

- Heating Equipment Assessment and Services – The status of the heating equipment is assessed and equipment is repaired or replaced as needed.
- Healthy Homes Assessment and Services - The status of the housing unit and household are assessed on an array of Healthy Homes indicators and services are provided to address potential hazards in the home.
- LIHEAP Assurance 16 Services – Staff identify opportunities for clients to reduce the amount of energy they use and to improve the household's ability to maintain their energy services.

The Healthy Homes Assessment and Services are delivered as a supplemental “add-on” program that compliments the main RRHACE heating equipment assessment and services by providing additional services to a subset of RRHACE clients. The Healthy Homes program uses the Department of Housing and Urban Development’s (HUD’s) Healthy Home Rating System (HHRS) to identify home deficiencies, determine potential hazards, score hazards, and determine recommended actions.

The Healthy Homes program is designed to improve safety in RRHACE client homes by identifying and addressing potential health and safety hazards via a home assessment and the installation of measures or remediation of hazards. The HHRS includes 29 individual hazards from four different hazard categories as follows:<sup>1</sup>

1. Physiological hazards
  - Damp and mold growth
  - Excess cold
  - Excess heat
  - Asbestos, silica, and other MMF
  - Biocides
  - Carbon monoxide and fuel combustion products
  - Lead
  - Radiation
  - Uncombusted fuel gas
  - Volatile organic compounds
2. Psychological harms
  - Crowding and space
  - Entry by intruders
  - Lighting
  - Noise
3. Protection against infection
  - Domestic hygiene, pests, and refuse
  - Food safety
  - Personal hygiene, sanitation, and drainage
  - Water supply
4. Protection against accidents
  - Falls associated with baths
  - Falling on level surfaces
  - Falling between levels
  - Electrical hazards
  - Fire
  - Flames and hot surfaces
  - Collision and entrapment

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<sup>1</sup> The main categories of hazards are taken from the American Public Health Association’s (APHA) 1938 publication titled “Basic Principles of Healthful Housing”.

- Explosions
- Position and operability of amenities
- Structural collapse and falling elements

The HHRS requires the Healthy Homes Assessor to conduct a home assessment, identify if any of the 29 potential hazards exist, and make judgments on the likelihood of harm resulting from any identified hazards. The Healthy Homes Assessor must determine the likelihood of harm, the spread of harms, the severity of harm, and a hazard score for the hazards that are the most serious threats. To express the results of the Healthy Homes assessment, the HHRS categorizes hazard scores into ten hazard bands, with Band A being the most dangerous (score of 5,000 or more) and Band J being the least dangerous (score of 9 or less).

The Healthy Homes component of RRHACE is closely integrated with the primary RRHACE heating equipment assessment and service delivery, but it includes distinct steps to enroll clients and provide Healthy Homes services. The program process for Healthy Homes is as follows:

1. First State identifies Healthy Homes candidates in one of three main ways.
  - a. During the initial RRHACE Site Inspection, First State's inspectors document if there is any work that is needed in order for the client's heating system to be effectively repaired or replaced and to operate efficiently and safely.
  - b. During their initial visit to inspect the heating equipment and prepare a price estimate, subcontractors will indicate if additional work is needed in order for the client's heating system to be effectively repaired or replaced and to operate efficiently and safely.
  - c. During the RRHACE Final Inspection, First State's inspectors will ask clients about health and safety issues in their home and conduct a visual inspection of the home. The inspector will document the Healthy Homes opportunities in the "Notes" section of the Final Inspection form and take pictures of any potential hazards found in the home. Clients are prioritized for enrollment in Healthy Homes based on the criteria for defining a crisis assistance client. Vulnerable clients who are elderly, disabled, have a medical condition, or have small children in the home are prioritized to receive Healthy Homes services.
2. The Healthy Homes Assessor will review documentation and pictures to score potential hazards and determine the appropriate actions.
3. The Healthy Homes Assessor will prepare a Scope of Work with the results of the Healthy Homes assessment and the scope of authorized work to address the hazard.
4. A subcontractor will be selected to complete the Healthy Homes work. In general, this will be the same subcontractor that completes the heating system repair or replacement. If possible, First State will try to coordinate the Healthy Homes work with the heating system repair or replacement work so that both occur at approximately the same time.
5. First State will conduct a Final Inspection of the Healthy Homes work to confirm that it was completed according to the Scope of Work specifications.

This timeframe for the Healthy Homes assessment and services varies from a few days for minor work or emergency crisis situations to several weeks before the work is completed.

## **II. In-Depth Interview Purpose**

Information obtained from in-depth interviews with program participants and program staff are one means of gaining insight into the implementation of public programs. These interviews can capture information that might not be available at the time of evaluation or that may not be discernable from program data or surveys. Additionally, in-depth interviews give program evaluators the opportunity to receive unique details, providing a more comprehensive picture of client and program staff experiences with the program. The semi-structured approach of the interviews ensures the interview covers specific topics of interest, but it also allows the interviewee and the interviewer to discuss topics as additional questions or details emerge during the interview.

APPRISE conducted in-depth interviews with participants in the Healthy Homes program and with First State's Healthy Homes Assessor to help answer the following key questions about the Healthy Homes assessment and services:

- Healthy Homes Client Targeting – How are clients identified as candidates for Healthy Homes? What factors are used to prioritize specific clients for Healthy Homes treatment? Are there any barriers to finding clients to receive Healthy Homes services?
- Healthy Homes Client Characteristics – What are common characteristics of the clients who participate in the program? Do they participate in other assistance programs? Are there any health, safety, or comfort concerns in the clients' homes? Were any clients deferred from the program?
- Healthy Homes Hazard Assessment & Scoring – How do inspectors document Healthy Homes opportunities? What is the process of the Healthy Homes assessment? Does the Assessor focus on any hazards in particular? How is the Healthy Homes assessment explained to clients?
- Healthy Homes Service Delivery – How are Healthy Homes services provided to clients and how does this align with the heating equipment repair and replacement work? Did clients have additional work completed through Healthy Homes? Do clients recall this additional work being completed? Did the contractor provide any maintenance information?
- Healthy Homes Final Inspection – Is there a Final Inspection for Healthy Homes work?
- Healthy Homes Training and Experience – How many First State staff are conducting Healthy Homes assessments? Have First State inspectors and subcontractors completed Healthy Homes training? Do inspectors have the appropriate experience to identify potential Healthy Homes clients? Is there any additional training that is planned for the future?
- Client Perceptions of Program Outcomes – How do clients describe their experiences in the program? Have clients noticed changes in health, comfort, and safety? Do clients feel there were health, safety, and comfort concerns that were not addressed by the program?

- Client Interactions with First State – Did clients feel First State staff was professional and respectful?
- Client Interaction with Subcontractors – Did clients think the subcontractor who completed the work was professional and respectful? Did clients face any difficulty with scheduling appointments?
- Overall Client Satisfaction – Are clients satisfied with the program process and results? Do clients have any complaints about the program or any recommendations?
- Healthy Homes Successes and Challenges – Have there been any challenges to effectively implement Healthy Homes? What has been the feedback from clients regarding Healthy Homes? Are there any planned modifications to Healthy Homes?

### **III. In-Depth Interview Approach**

#### *Client Interviews*

APPRISE worked with First State staff to select clients for the in-depth interviews as follows:

1. APPRISE reviewed the full list of Healthy Homes program participants provided by First State. APPRISE identified clients that had completed the heating equipment repair and replacement and Healthy Homes services prior to May of 2016, and who received one of the three primary Healthy Homes measures that First State targeted (duct work, electrical work, and domestic hot water heater replacement). APPRISE randomly selected two clients from each of the following groups:
  - a. Clients with replaced heating systems and Healthy Homes duct work
  - b. Clients with replaced heating systems and Healthy Homes domestic hot water heater replacement
  - c. Clients with repaired heating systems and Healthy Homes duct work
  - d. Clients with repaired heating systems and Healthy Homes electrical work

In total, eight clients were selected for the in-depth interviews. The eight selected clients received program services during approximately the same time period, but the clients varied in county of residence, type of services received (heater repair or replacement), additional work completed through Healthy Homes, and deferral status.

- County – Six clients were from Sussex County, one was from Kent County, and one was from New Castle County.
- Type of Services Received – Four clients received new heating systems and four received heating system repair work.
- Additional Work through Healthy Homes – Four clients replaced or repaired duct work, two clients installed new water heaters, and two clients received electrical work.

- Deferral Status – One client had previously been deferred from the RRHACE program, and seven clients had never been deferred.

Once the eight clients were selected, First State staff sent APPRISE a tracking sheet with information on the services provided to each client in order to prepare for conducting the interviews. APPRISE Research Associate Camille D'Andrea contacted the clients directly to explain the research effort and conduct the survey, scheduling the interview for a later date if necessary.

Ms. D'Andrea began calling the clients on August 11, 2016 to conduct the phone interviews. Clients were called between 9AM and 5PM, making multiple attempts and leaving messages on every other attempt.

Interviews were completed with six of the eight targeted clients. Interviews were completed using an Interview Guide that included topics and questions to structure and direct the interview. Interviews were recorded with respondent approval. Interviews took place between August 12, 2016 and September 6, 2016. The average interview length was approximately 20 minutes.

Following the interviews, APPRISE staff reviewed the interview notes and recordings and drafted interview summaries.

#### Healthy Homes Assessor Interview

APPRISE interviewed First State's Healthy Homes Assessor on September 16<sup>th</sup> for approximately one hour. The interview was conducted by APPRISE Senior Policy Analyst Dan Bausch. Following the interview, APPRISE staff reviewed notes and summarized the interview.

## **IV. Client In-Depth Interview Findings**

This section provides a summary of the findings from the in-depth client interviews.

#### Healthy Homes Client Characteristics

- All six clients confirmed that they had their heater repaired or replaced through the RRHACE program.
  - Four clients had their heating system replaced.
  - Two clients had their heating system repaired.
- Clients reported a variety of potential health and safety hazards that existed in their home at the time of program intervention.
  - Three clients said their home has issues with dampness or mold.
  - One client mentioned air quality issues stemming from the mold spots on her wall.
  - Two clients noted pest or rodent issues in their homes.
    - One client mentioned once in a while she will find mice in her home.

- One client said she needs to spray for cockroaches and black ants.
- Five clients reported plumbing or water-related issues in their homes.
  - Issues mentioned include the bathroom floor being soft, clogged gutters and leaf guards, leaks in water pipes under the home, water stains in the home, and older plumbing.
- Two clients expressed concerns about electrical hazards in their home.
  - One client explained that the city came to her home and said she had hot spots, so she was told not to keep flowers or vines in that area.
  - One client said her electric in the living room goes on and off.
- Three clients said there were structural concerns in their homes.
  - Three clients expressed concerns with their roof.
  - One client explained that her house had gone through a settling process and there were cracks in the foundation.
- No clients noted mobility restrictions or falling hazards in their home.
- Five clients reported comfort concerns in their home prior to program participation.
- Clients had a range of vulnerable household members.
  - Four of the clients had at least one elderly member in their household.
  - Three of the clients had at least one member with a chronic health or breathing problem.

#### Healthy Homes Service Delivery

- The interviewed clients received different Healthy Homes measures.
  - Three clients had their duct system repaired or replaced.
  - Two clients had a new domestic hot water heater installed.
  - One client had minor electrical work completed.
- Five out of six clients recalled having additional work completed beyond the heating equipment repair and replacement.
  - One client reported that the additional work was done at the same time as the heater.
  - Three clients noted the subcontractor that completed the heating work also completed the Healthy Homes work, and one client thought the same subcontractor completed the Healthy Homes work, but was not sure.



- One client said the additional work was not completed by the same subcontractor.
- One of the two clients who received a new hot water heater reported that the subcontractor left the instruction manual. The other client reported the subcontractor did not leave a manual or provide information on properly maintaining the new hot water heater.

#### Client Perceptions of Program Outcomes

- Five of six clients noted changes in health, comfort, or safety related to the additional Heathy Homes work.
  - One client who received duct work reported that she no longer notices a bad smell in the home and feels safer.
  - One client who received duct work reported that she believes the duct work contributed to health improvements.
  - Two clients mentioned their home is now more comfortable.
- Three clients felt there were health and safety concerns that were not addressed by the program.
  - One client mentioned that she does not have smoke detectors.
  - One client expressed concern about her bathroom floor because it is soft.
  - One client said that she has called First State for help with insulation, plumbing, and electrical, but has not received any help. She said the electric sometimes goes off in her living room.
- All six clients expressed positive experiences with the program.
  - One client said the program was a “10” and she experienced no problems.
  - Two clients said that everyone was professional and the work was done in a timely manner.
  - One client explained that this was the second time she has received services from First State and “they are good people and know what they are doing.”

#### Client Interactions with First State

- All six clients indicated that First State staff were professional and responsive to their needs.

#### Client Interactions with Subcontractors

- All six clients said the subcontractor who completed the work was professional and respectful.



- All six clients reported that scheduling appointments was very easy and not difficult.
  - Five clients mentioned there were no missed appointments.
  - One client noted that the subcontractor had to cancel one day, but he called and they were able to reschedule.

#### Overall Client Satisfaction

- All six clients were satisfied with the results from the program.
  - One client was satisfied, but expressed concern that there might be issues with the duct work because the same amount of heat is not coming out of the vents. The client indicated that the subcontractor said that the ducts were working properly.
- Four clients did not have any complaints about the program or any recommendations.
  - One client mentioned First State could offer more options to assist with home hazards, such as repairing the roof.
  - One client expressed that First State could address other concerns. She reported that she has “called First State about plumbing, electrical, insulation, and mold, but has not gotten anywhere. [She] was told there is a new program starting to help with these things, but has not heard anything.”

### **V. Healthy Homes Assessor In-Depth Interview Findings**

This section provides a summary of the findings from the Healthy Homes Assessor interview.

#### Healthy Homes Client Targeting

- The Assessor confirmed that Healthy Homes targets clients who are elderly, disabled, who have a medical condition, or who have children in the house. Clients are prioritized based on the same criteria as defining a crisis assistance client.
- The Healthy Homes Assessor reported that the identification of Healthy Homes opportunities is mainly achieved during the Final Inspection process, although it also occurs earlier when work is needed to support the installation or repair of the main heating equipment.
- The Healthy Homes Assessor said the biggest barrier to finding potential Healthy Homes clients is client awareness of services and client transparency about problems that exist in their homes.

#### Healthy Homes Hazard Assessment & Scoring

- Inspectors document potential Healthy Homes opportunities in the “Notes” field of the Site Inspection form and the Final Inspection form.
- The Healthy Homes Assessor explained the Healthy Homes assessment process.

- The First State inspector asks clients questions about their living conditions, about themselves, and about their health.
  - There is a visual inspection of the home to identify hazards, including taking pictures.
  - The Assessor reviews documentation and identifies hazards, scores the hazard, and then determines the scope of work to address and remove the hazard.
  - The outcome of the assessment is a work order with pictures.
  - The Assessor mentioned using an unsophisticated Excel program for scoring the hazard because he is the only one currently performing the Healthy Homes assessments.
- The Healthy Homes Assessor said the assessment does use the list of 29 hazards, but First State is generally focused on identifying and addressing the following hazards:
  - Damp and Mold growth
  - Carbon Monoxide and Fuel Combustion Products
  - Water Supply
  - Falling on Level Surfaces
  - Falling on Stairs
  - Electrical Hazards
  - Structural Collapse and Falling Elements
- The Healthy Homes Assessor explains to the clients that health and safety are part of the Inspection process.
  - The list of 29 hazards is shown to the client to help guide the discussion.
  - He noted that nobody says that they do not want work done or turns down the work.
- The Healthy Homes Assessor confirmed that clients view all work done by First State as part of the main RRHACE heating program.

#### Healthy Homes Service Delivery

- The Healthy Homes Assessor said the goal of Healthy Homes is to improve the health and safety of the environment where the person is living.
- The Healthy Homes Assessor estimated that roughly 60% of the total number of RRHACE homes have also received Healthy Homes.

- The Healthy Homes Assessor explained more homes than expected have been able to receive Healthy Homes services due to less spending per home.
  - He reported the average spending per home is about \$1,875, and spending above \$3,000 is rare.
  - The new goal is to use all of the allocated funding rather than target a specific number of households.
- The Healthy Homes Assessor reported that Healthy Homes mostly provides work on duct work, domestic hot water heaters, and ventilation to support the heating system.
  - He estimated about 15 percent of homes have electrical work done, and some work also involves pest infestations, structural collapse, and any risks for falling on stairs or on level surfaces.
  - He also focuses on issues that can be seen and fixed to improve the home environment.
- The Healthy Homes Assessor explained that generally the Healthy Homes work takes place after the main heating system repair or replacement is complete.
  - He said that the “period of performance” for the contract determines the deadline for the work.
  - He tries to coordinate work as much as possible, but this depends on many factors.
- The Healthy Homes Assessor believed all RRHACE heating subcontractors are also doing Healthy Homes work.
  - He mentioned that generally First State tries to have the contractor who completed the heating work also complete the Healthy Homes work.

#### Healthy Homes Final Inspection

- The Healthy Homes Assessor indicated that there is always a Final Inspection of Healthy Homes work.
  - The form that is used is the same form as the main Final Inspection form, and there is no separate documentation.

#### Healthy Homes Training and Experience

- The Healthy Homes Assessor reported that currently he is the only First State staff conducting Healthy Homes assessments.
  - He has completed Healthy Homes training on the Healthy Homes rating system.
  - His staff has not had formal training on Healthy Homes, but they have completed an essentials course on health and safety issues.

- The Healthy Homes Assessor does not think that the inspectors are adequately identifying potential Healthy Homes clients.
  - He thinks inspectors lack full training and understanding of Healthy Homes, and they do not always effectively ensure clients have a complete understanding of Healthy Homes.
- The Healthy Homes Assessor mentioned his intention to have all the RRHACE inspectors trained in Healthy Homes so that they can conduct the assessments.
  - He has registered all the inspectors for a 2-day “Healthy Homes Rating System” training course in October sponsored by Johns Hopkins Education and Research Center (ERC) for Occupational Safety and Health, which includes education and fieldwork.
  - He is also inviting the subcontractors to have staff attend the October training.
- With the additional training, there are plans to more effectively implement the rating system and to expand to other Healthy Homes measures.

#### Healthy Homes Successes and Challenges

- The Healthy Homes Assessor indicated that there have been communication problems between the client, First State, and the contractor doing the work.
- The Healthy Homes Assessor has not received any negative feedback indicating clients did not want the work completed or wished they had not had the work done.
- The Healthy Homes Assessor said people are very appreciative of the help they are given and show gratitude for the assistance.
- The Healthy Homes Assessor discussed his desire to create a “Quick Help Assessor” position who would go through the home in about 45 minutes and give a thorough and quick assessment of the home.

## **VI. Recommendations**

This section presents recommendations based upon the Healthy Homes evaluation findings.

1. First State currently has one formally-trained Healthy Homes Assessor with knowledge of the HHRS. As a result, First State relies on inspectors and subcontractors to identify potential hazards, at least a portion of Healthy Homes assessments are partially completed remotely using pictures and documentation, and the full implementation of the Healthy Homes program has been delayed. First State should proceed with plans to have all current inspectors attend formal Healthy Homes training in order to have additional qualified Healthy Homes Assessors who can perform the full Healthy Homes assessment and hazard scoring.
2. While most clients recalled work being completed in addition to the repair or replacement of their heating equipment, one client was unaware that there was additional work done. Additionally, the Healthy Homes Assessor explained that communication is a challenge in the Healthy Homes program. Inspectors and subcontractors should clearly explain to

clients the work they are doing and the purpose and goals of Healthy Homes, as well as confirm with clients that they understand the results of the Healthy Homes assessment.

3. First State currently focuses on a few selected hazards from the Healthy Homes hazards list. The client interviews found that three of the six clients indicated that they believed additional health and safety risks existed in their home and were not addressed by the program. In addition, First State is providing Healthy Homes services in more homes than originally targeted due to spending less per home than anticipated. As the program moves forward, First State should implement the full assessment of all 29 Healthy Homes hazards and work to provide more comprehensive Healthy Homes services to each client.
4. As more staff receive Healthy Homes training, First State should create formal documentation to record the information for the Healthy Homes assessments, service delivery, and Final Inspection. Also, First State should consider creating a new Healthy Homes Final Inspection form, rather than using the existing form that is designed primarily for the heating system repair and replacement.