

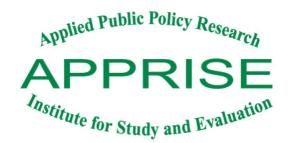
### Best Practices In Low-Income Energy Efficiency Programs

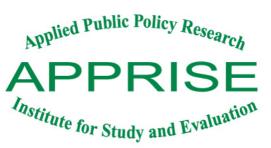
Jackie Berger

ACI Home Performance Conference April 30, 2014

#### Presentation Outline

- Program Goals
- Management
- Eligibility
- Targeting and Outreach
- Services
- Energy Education
- Service Delivery
- Data Management
- Quality Control
- Evaluation





#### **GOALS**

## Program Goals Options

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- Energy savings
- Benefit cost ratio
- Greenhouse gas emissions
- Bill impacts
- Reduce ratepayer subsidy
- Number of homes served
- Amount spent per home or in the program year
- Targeting need (elderly, disabled, children, energy burden)
- Innovative usage reduction measures
- Innovative program delivery systems

# Program Goals Advantages & Disadvantages APPRISE Advantages & Disadvantages Institute for Study and Evaluation

### Energy Savings

- Advantages: sets concrete standards of measurement for program and contractor.
- Disadvantages:
  - Particular level of savings may be difficult reach depending on condition of customer homes and budget constraints.
  - Time lag to estimate impacts based on billing data.

### Program Goals Advantages & Disadvantages APPKISE Advantages & Disadvantages APPKISE \*\*Institute for Study and Evaluation\*\*



- Cost-Effectiveness
  - Advantages:
    - Concrete
    - Justifiable
  - Disadvantages:
    - Which formula TRC, Utility, Societal...
    - Difficulty and controversy in measuring benefits health impacts, environmental, etc.

### Program Goals Advantages & Disadvantages Institute for Study and Evaluation



- Reduce ratepayer subsidy
  - Advantages: if achieved, the program will result in cost-effective savings for the ratepayers.
  - Disadvantages: if all benefits go to the ratepayers, there may be less motivation for customers to participate in energy reduction strategies.

### Program Goals Advantages & Disadvantages APPKISE Advantages & Disadvantages



- Number of homes served
  - Advantages: ensure that benefits are distributed to a minimum number of customers
  - Disadvantages:
    - With a set budget, places limits on the level of services that a household can receive.
    - What benefit is achieved?

### Program Goals Advantages & Disadvantages APPKISE Advantages & Disadvantages APPKISE Institute for Study and Evaluation



- Amount spent per home
  - Advantages: ensure that a certain number of homes can be served within the allocated budget.
  - Disadvantages:
    - May not allow enough flexibility to address homes with severe problems.
    - May be leaving savings opportunities unaddressed.

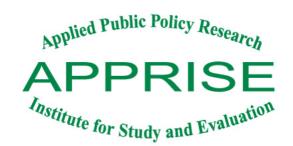
# Program Goals Advantages & Disadvantages APPRISE Advantages & Disadvantages Institute for Study and Evaluation

- Targeting high need customers
  - Advantages: provides benefits to those who may suffer most from unaffordable energy bills.
  - Disadvantages: may not provide the most costeffective program if these are not the highest energy users.

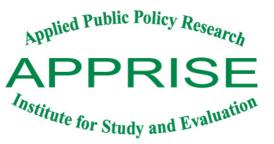
# Program Goals Advantages & Disadvantages APPRISE Advantages & Disadvantages Institute for Study and Evaluation

- Innovative usage reduction measures
- Innovative program delivery systems
  - Advantages:
    - Allows for testing of these new measures and systems that may prove to be cost-effective in the long-run.
    - May lead to more effective program.
  - Disadvantages:
    - Due the to learning curve, program may not be as cost-effective.
    - Need opportunity to pilot test.

## Program Goals Best Practices



- Relates to program's mission
- Concrete
  - Save X ccf/kWh on average per home served
  - Reach 1.25 benefit-cost ratio
  - Reduce ratepayer burden by 5%
- Measurable
  - Plan for how you are going to measure
- Challenging, but achievable
  - Based on past results or other benchmark



#### **MANAGEMENT**

### Program Management Options



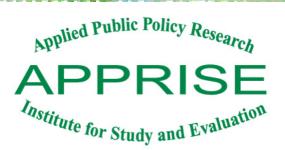
- Public Utility Commission
- State
- Team of Utilities
- Individual Utility
- 3<sup>rd</sup> Party Administrator

# Program Management Advantages & Disadvantages APPRISE Advantages & Disadvantages Applied Public Policy Research APPRISE Advantages & Disadvantages Applied Public Policy Research Appl

### Centralized program – PUC or State

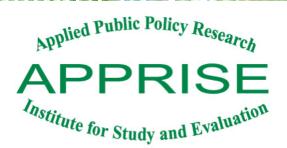
- Advantages
  - Customers across the state receive equivalent benefits.
  - Utilities may work together to develop best practices for combined approach.
  - May be greater opportunity for joint delivery across electric/gas utilities.
- Disadvantages
  - Utilities may not have the same program commitment and involvement.
  - May lose utility-specific customer knowledge.

### Program Management Examples

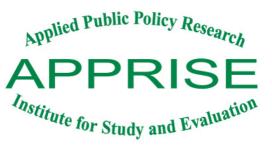


- Pennsylvania: Each utility manages its own usage reduction program.
- New Jersey: Utilities work together on joint program.
- Ohio: Electric Partnership Program managed by the state.

### Program Management Best Practices

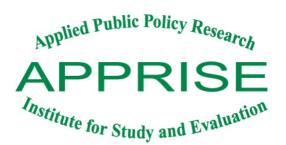


- Opportunities
  - What is there to gain from each option?
- Capabilities
  - Which organization is best positioned to manage?
- Constraints
  - What staffing or resource constraints are faced?



#### **ELIGIBILITY**

## Program Eligibility Options



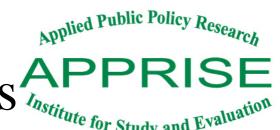
- Income level
  - Usually up to 150% or 200% of Federal Poverty
     Level
- Home Ownership
- Usage Guidelines
- Participation in bill payment assistance programs

# Program Eligibility Advantages & Disadvantages APPRISE Advantages & Disadvantages Institute for Study and Evaluation

#### Income level

- Advantages: more restrictive income limits mean that those with the least ability to pay their bills receive services.
- Disadvantages: more restrictive income limits may mean that the highest use customers are may not be served.

### Program Eligibility Advantages & Disadvantages APPKISE Advantages & Disadvantages APPKISE \*\*Institute for Study and Evaluation\*\*



### Home Ownership

- Advantages:
  - Home owners may be more likely to remain in home and see benefits over time.
  - Landlord permission is not needed.
- *Disadvantages*: some needy households are not served.

# Program Eligibility Advantages & Disadvantages APPRISE Advantages & Disadvantages Institute for Study and Evaluation

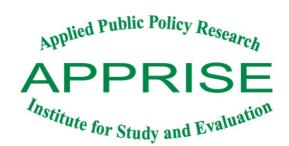
### • Usage

- Advantages: restricting eligibility to highest use customers usually results in greatest energy savings.
- Disadvantages: exclusive focus on usage does not allow for serving those most in need, i.e. lowest income, highest energy burden, elderly, disabled, young children.

# Program Eligibility Advantages & Disadvantages APPRISE Advantages & Disadvantages Institute for Study and Evaluation

- Participation in bill payment assistance programs
  - Advantages: reductions in usage result in reduction in subsidies that burden the ratepayers.
  - Disadvantages: customers who do not participate in bill assistance will not receive usage reduction benefits.

## Program Eligibility Best Practices

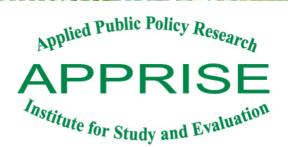


- Review goals
- Assess other available programs
  - May try to reach population that is not served by other programs
- Revisit over time
  - After several years, may need to revise pre-treatment usage guideline down



#### TARGETING AND OUTREACH

## Targeting and Outreach Options



- Highest use customers
- Highest subsidy customers
- Payment troubled customers
- Vulnerable households (young children, elderly, disabled)

# Targeting and Outreach Advantages & Disadvantages APPRISE Advantages & Disadvantages Institute for Study and Evaluation

#### • Highest use customers

- Advantages:
  - Usually results in highest energy savings.
  - Utilities can develop list of high-usage, low-income customers.
- Disadvantages:
  - May not focus on lower usage customers with high needs due to income, energy burden, other characteristics.
  - Highest users may have conditions in home that prevent service delivery.
  - Centrally managed program may have more difficult time finding high users.

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# Targeting and Outreach Advantages & Disadvantages APPRISE Advantages & Disadvantages Applied Public Policy Research APPRISE

- Highest subsidy customers
  - Advantages:
    - Benefits of the program go to the ratepayers
    - Utility or program manager can develop list of targeted customers
  - Disadvantages: other needy customers may not be served

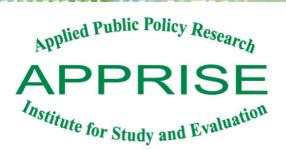
# Targeting and Outreach Advantages & Disadvantages APPRISE Advantages & Disadvantages Applied Public Policy Research Advantages

- Payment troubled customers
  - Advantages:
    - May increase bill payment coverage rates.
    - Customers may be motivated to reduce usage.
    - Utility can target customers who express need for assistance.
    - WAP agency can target customers who received LIHEAP.
  - Disadvantages:
    - May not result in greatest usage reduction.
    - Some households may be better served with energy assistance (low usage, lowest income.)

# Targeting and Outreach Advantages & Disadvantages APPRISE Advantages & Disadvantages Institute for Study and Evaluation

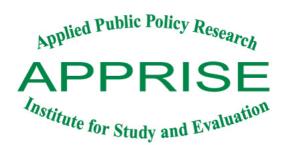
- Vulnerable households (young children, elderly, disabled)
  - Advantages:
    - Reduce energy usage for those who are sensitive to temperature extremes.
    - Nonprofit agency can prioritize these households for service delivery.
  - Disadvantages:
    - May not result in greatest usage reduction.
    - May restrict opportunity to coordinate with utility programs.

## Targeting and Outreach Examples

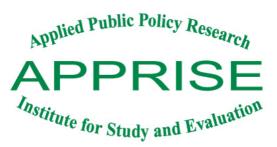


- PGW one contractor initially targeted highest users, but found too many barriers in home.
- PGW good savings with very high usage customers.
- OH REACH additional services delivered to customers with health problems.
- NJ Comfort Partners & PPL customers at subsidy limit can benefit.

### Targeting and Outreach Best Practices

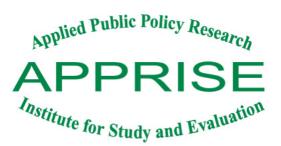


- Review goals
- Work collaboratively
  - -State office, utilities, CBOs, other
- Take multi-pronged approach
  - Different approaches work based on population segment.
- Assess what is working
- Revisit over time



#### **SERVICES**

### Services Options



- Comprehensive maximize savings per home
- Cost threshold / \$ limit per household
- Minimal increase number of households served
- Varied, depending on energy usage

#### Services

## Advantages & Disadvantages APPKISE Advantages & Disadvantages



### Comprehensive

- Advantages
  - Maximize usage reduction for homes served.
  - Minimize administrative expenses as a percentage of total costs.
  - Reduce need for another program to return to home.
- Disadvantages
  - Fewer homes may be served.

#### Services

## Advantages & Disadvantages APPKISE Advantages & Disadvantages



#### Cost threshold

- Advantages
  - Serve a greater number of households.
  - Ensure that a minimum number of households are served.
- Disadvantages
  - Does not take individual household circumstances into account.
  - May spend too little in some homes and too much in others.
  - May spend more than what is cost-effective in some homes.

#### Services

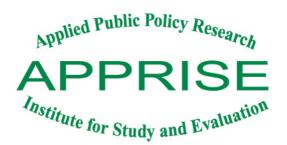
## Advantages & Disadvantages APPKISE Advantages & Disadvantages



#### Minimal

- Advantages
  - Increase number of households served.
- Disadvantages
  - Customers may not receive significant savings.
  - Administrative costs are duplicated when other programs return to serve the household.

# Services Vary By Customer Usage



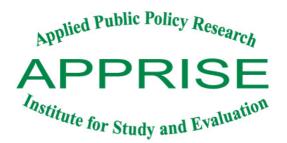
- Advantages
  - Service level is targeted to need.
- Disadvantages
  - Households are not treated equally.

### Services Example



- CO Energy Efficiency Programs
  - Full cost
  - Low cost in home
  - Kit with postcard
  - Kit sent to list
- PPL WRAP
  - Full cost
  - Water heating
  - Baseload

## Services Best Practices

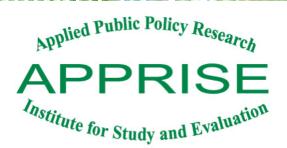


- Review goals
- Research program models
- Pilot test
- Evaluate
- Re-visit



#### **ENERGY EDUCATION**

# Energy Education Options



- Partnership between program/educator and customer
- Understanding the energy bills
- Energy use and costs around the home
- Customer goals for usage reduction
- Customer action plan
- Follow-up

# Energy Education Advantages & Disadvantages APPRISE Advantages & Disadvantages Institute for Study and Evaluation

- Partnership between program /educator and customer
  - Advantages: if successful, customer has more motivation to take steps to reduce energy usage.
  - Disadvantages: takes skilled and dedicated auditor to make it work.

### **Energy Education** Advantages & Disadvantages APPKISE Advantages & Disadvantages APPKISE Institute for Study and Evaluation



- Understanding the energy bills
- Energy use and costs around the home
  - Advantages
    - If the customer understands how to read the bill and determine when usage is decreasing, it provides positive re-enforcement for energysaving actions.
    - Allows customer to make decisions about energy usage based on the costs of those uses.
  - Disadvantages
    - Requires auditor with good communication skills.
    - Increases length of audit.

# Energy Education Applied Public Policy Research Advantages & Disadvantages APPRISE Advantages & Disadvantages Institute for Study and Evaluation

- Customer goals for usage reduction
- Customer action plan
  - Advantages
    - Provides motivation for customer to reduce energy usage
    - Provides direction for customer.
  - Disadvantages
    - Some customers will not be interested.
    - Auditors must be skillful and willing to take the time required.

# Energy Education Examples



- NJ Comfort Partners
  - Energy education notebook
  - -2 hours allocated
- PECO
  - Energy education in home
  - Monthly follow-up letters

## Services Best Practices

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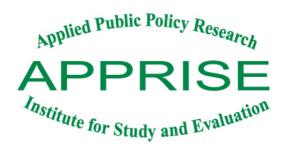
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- Assess capabilities
- Provide training
- Perform quality control
- Evaluate
- Refine
- Re-train



## SERVICE DELIVERY ORGANIZATIONS

### Service Delivery Options



- Private contractors
- Weatherization agencies
- Community Action Agencies
- Other nonprofit
- Mix of the above groups

### Service Delivery Advantages & Disadvantages APPKISE Advantages & Disadvantages



#### Private contractors

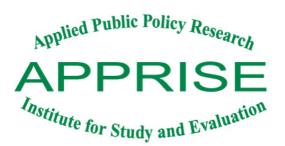
- Advantages
  - Cash flow management
  - Data management capabilities
  - Ability to hire additional staff
- Disadvantages
  - May have less knowledge/experience with other public programs
  - May be too focused on profit

## Service Delivery Advantages & Disadvantages APPKISE Advantages & Disadvantages

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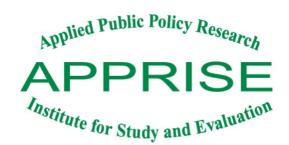
- Weatherization agencies
- Community Action Agencies
- Other nonprofit
  - Advantages:
    - Ability to provide joint service delivery of multiple utility programs and/or WAP.
    - WAP agencies already have consistent policies and procedures that can be implemented in utility program.
  - Disadvantages: may not have experience with contract work.

### Service Delivery Example

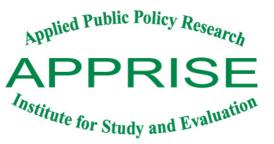


- NJ CP, PGW private contractors
- PPL combination
- UGI WAP agencies

#### Service Delivery Best Practices

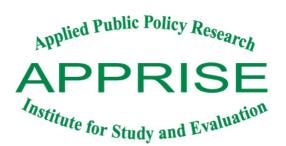


- Review goals
- Assess capabilities and experience
- Assess operating environment
- Hold accountable
- Re-visit



#### DATA MANAGEMENT

### Data Management Options



- Paper data collection
  - Data collected on paper at the customer's home
  - Data entered by contractor after the visit
- Computerized data collection
  - Customer data loaded into software
  - Data entered in laptop or PDA while in the customer's home
  - Data uploaded to data management system

# Data Management Applied Public Policy Research Advantages & Disadvantages APPRISE Advantages & Disadvantages Institute for Study and Evaluation

- Computerized data collection
  - Advantages
    - Auditor can have customer data (including usage) available on site.
    - Data entry is not necessary following the visit.
    - Software can calculate cost-effectiveness based on customer usage and other characteristics.
  - Disadvantages
    - Computer can interview with customer relationship.
    - Data can be lost.
    - Providers may be resistant.

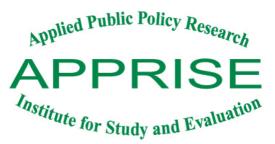
#### Service Delivery Best Practices

Applied Public Policy Research

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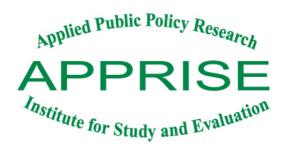
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- Assess data needs
  - -Management
  - Operations
  - -Evaluation
- Assess capabilities and experience
- Assess operating environment
- Perform cost-benefit analysis
- Provide training



#### **QUALITY CONTROL**

# Quality Control Options



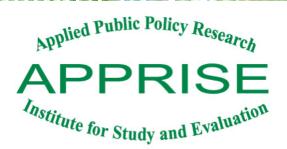
- Internal/External
  - State or utility personnel
  - Third party inspectors
- Sampling
  - What percent of jobs should be inspected?
- Targeting
  - Equal/random inspection of each contractor
  - Focus on contractors who have shown problems in the past

### **Quality Control** Advantages & Disadvantages APPKISE Advantages & Disadvantages APPKISE Institute for Study and Evaluation

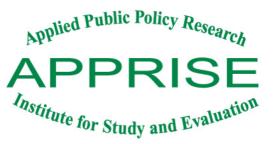


- External quality control
  - Advantages
    - More time may be devoted to quality control.
    - May have more systematic procedures for quality control.
    - May be more objective.
  - Disadvantages
    - May be more expensive.
    - Inspectors may not have good understanding of program design and procedures.

## Quality Control Best Practices

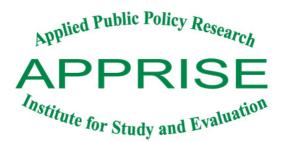


- Assess provider capabilities and experience
- Develop systematic procedures
- Collect and review data
- Re-visit based on findings



#### **EVALUATION**

# Evaluation Options



- Internal/External
  - Conducted by state/utility
  - Conducted by third party evaluator
- Impact
  - Energy usage
  - Bill payment
  - Environmental
  - Economic
- Process
  - Efficiency/effectiveness of program
  - Why is the program achieving the outcomes

#### **Evaluation**

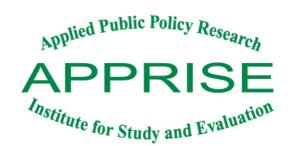
## Advantages & Disadvantages APPKISE Advantages & Disadvantages



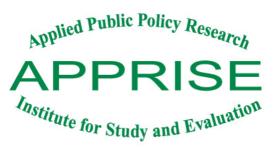
#### External

- Advantages
  - More time may be devoted to evaluation.
  - Evaluation expertise.
  - May have more systematic procedures for evaluation.
  - May be more objective / less biased.
- Disadvantages
  - More expensive.
  - May not have an understanding of the program and components.

## Evaluation Best Practices

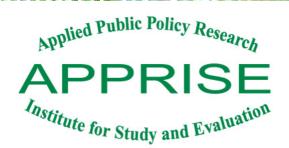


- Assess information needs
- Design evaluation
- Use results to improve performance
  - Policies and procedures
  - Systems and tools
  - Training
  - Quality Control



#### **SUMMARY**

#### Summary Recommendations



- Identify and prioritize goals
- Recognize unique characteristics of environment
  - Geography/weather
  - Political/social
  - Resources
- Review program models
- Pilot test before implementing
- Evaluate and improve