

Section 4: Designing a Successful Energy-Plus-Health Program



For readers who are committed to developing a Tier 2 or 3 program and want in-depth program design guidance.

4.1 Introduction

This section provides in-depth program design guidance for PAs who are interested in developing a Tier 2 or 3 Energy-Plus-Health program. While [Section 3](#) provides a general framework for Tier 2 and 3 programs, each program will be highly customized depending on local goals, stakeholders and partners, available resources, and other factors. This section provides guiding questions and recommended program design steps to help PAs develop successful Energy-Plus-Health programs that are tailored to local conditions.

4.2 Understand Efficiency Program Priorities and Readiness for Energy-Plus-Health Programs

The following questions can help PAs evaluate current efficiency program offerings and understand opportunities for deeper healthy homes services:

- ✓ What are the program's goals and strategies?
 - ✓ What are our current program and customer challenges and barriers?
 - ✓ What current program offerings connect to the eight principles of healthy homes? Do we currently deliver whole-house energy retrofits that address health and safety?
 - ✓ What new products or services can we offer that further the eight principles of healthy homes? How do they fit within the program strategy or address program barriers?
 - ✓ What services can be incorporated into existing programs?
 - ✓ What common healthy-home issues have program contractors and implementers identified? Have program implementers struggled to support customers in remediating those issues?
 - ✓ Do we have the capacity to lead or participate in a collaborative process to design and deploy an integrated Energy-Plus-Health program including new data collection and tracking systems?
 - ✓ Are our contractors and implementation vendors interested in expanding the services provided to include health-related repairs?
 - ✓ Do we have an existing contractor network that with relevant training or interest in added training, certification (BPI Healthy Homes Evaluator), and skill building to deliver expanded services?
 - ✓ Do we have buy-in from decision-makers and regulators to expand program offerings to include health? Can we make the case for an Energy-Plus-Health pilot to quantify non-energy impacts and other benefits?
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4.3 Conduct a Market Evaluation

If an efficiency program desires deeper engagement in a healthy homes program, meeting with the health care community to explore the following questions will offer market information and

context for program design. [Section 5: Navigating Health Care Industry Partners](#) provides further information on health industry players, trends, and funding opportunities.

The following questions can help PAs identify key health industry stakeholders, needs, and priorities:

- ✓ Which community-based organizations and governmental programs address one or more of the principles of healthy housing, provide related services, and / or serve customers our programs would like to target? These might be local aging-in-place service providers, housing rehab and repair agencies, in-home care providers, weatherization programs, community health teams, in-home asthma program providers, or neighborhood associations.
- ✓ Who are the local health care providers and how do they organize themselves as an industry?
- ✓ What are the local health care industry's pain points and challenges with regard to care coordination, access to community resources for patient support, and cost pressures?
- ✓ What goals have been established by industry regulators and providers to address these pain points?
- ✓ Which are the most expensive patient populations for the targeted health care providers?
- ✓ Are there population characteristics that lead to high hospital readmission rates or more emergency department (ED) visits? Common populations include those with one or more of the following criteria: low-income, elderly, children, asthma, COPD, cystic fibrosis, high probability for trips and falls or accessibility issues, heat and cold thermal stress. Often these populations can be identified through community health needs assessments, as explained in [Section 5](#).
- ✓ What additional patient populations are likely to significantly benefit from energy efficiency retrofits?
- ✓ What local, regional, or state organizations identify patient populations, and what health conditions are those groups highlighting now? Examples are asthma coalitions, public health departments, senior safety, and climate and health committees.
- ✓ What niche can our organization fill for the identified market and possible partners, and how could this market and partners help resolve our program challenges and customer problems?

Once the opportunity has been defined, the following are the additional steps to building a Tier 2 or 3 Energy-Plus-Health program. These are not comprehensive instructions, but rather complementary tasks for successful program development.

4.4 Build Relationships and a Culture of Healthy Homes

Energy efficiency programs that build relationships within the health care system at multiple levels have the most long-term success and resiliency. The following tactics have proven successful in engaging the health community:

- ✓ Join health and housing industry conversations by meeting with health care partners, community-based organizations, and local and national councils to gain a deeper understanding of their worlds.
 - ✓ Attend health and housing industry-specific association meetings and conferences for quick immersion and partner identification.³⁷
 - ✓ Locate any Health Impact Assessments performed by local or state public health offices to learn more about the health department's priorities.
 - ✓ Leverage existing account management relationships with hospitals to identify internal hospital champions.
 - ✓ Request introduction to the appropriate hospital departmental representatives for expanding the energy efficiency discussion to explain the social determinants of health, and how hospital patient homes could be part of the patient wellness issue.
 - ✓ These representatives are often found in coordinated care or community health departments and clinics, and/or are physician specialists treating patients with symptoms associated with healthy homes goals (pulmonologists, for example, and pediatricians).
 - ✓ Engage hospital human resources departments to provide employee-centered residential energy efficiency training and services. Such workshops raise staff awareness of the opportunities in their own homes, so that staff begin to think about opportunities in patient homes as well.
 - ✓ Build a culture of awareness about healthy and energy-efficient homes in the greater community by leveraging existing efficiency program marketing and outreach activities to provide information on healthy homes.
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4.5 Collaborate on Program Design

Next, PAs should work closely with health partners to determine which services the Energy-Plus-Health program will offer to target populations, and how the offerings will be delivered, tracked, evaluated, funded, and scaled. These decisions are best made with customer-centered design strategies and with full consideration of budgets, resources, timelines, and existing or new infrastructure.

4.5.1 Define Energy-Plus-Health

Given the variability in stakeholder needs, market conditions and available resources, and program goals, the program definition of Energy-Plus-Health will be market-specific. Providing a clear program-specific definition for a healthy home is important to ensure:

- ✓ Transparency in program marketing.
- ✓ Mutual understanding across all stakeholders and customers of what the program does and does not deliver when compared to the [eight principles of healthy homes](#).
- ✓ Risk mitigation.

³⁷ The [American Council for an Energy-Efficient Economy](#) launched a new conference in 2018, Conference on Health, Environment, and Energy, bringing together energy efficiency and health care professionals.

4.5.2 Identify and Engage Target Populations

Based on the program's definition of Energy-Plus-Health and stakeholder needs, a target population can be defined. Programs often target hard-to-reach customers meeting one or more of the following criteria:

- ✓ Demographic qualifiers (energy burden, household income, housing tenure, housing characteristics, Census tract or geographic location, age, etc.).
- ✓ Patients served by a health care provider network.
- ✓ Patients with one or more potentially costly housing-related health issues such as trips and falls, asthma, chronic obstructive pulmonary disease (COPD), or cystic fibrosis that can be lessened by improvements in indoor environmental quality with high potential for providing short- and long-term reductions in health care spending to demonstrate program value.
- ✓ Additional market-specific identifiers important to program collaborators (such as defined in a [Community Health Needs Assessment](#)).

Programs with health care provider-led patient engagement and direct referrals tend to have the highest rates of patient enrollment. Equally important is a process for non-health care program partners to provide customer referrals to the program.

4.5.3 Customer-Centered Program Design

Using customer-centered program design (also known as human-centered design) enables programs to:

- ✓ Place the customer in the center of the design process, and
- ✓ Improve the end-product or service by directly addressing the needs of the customer.

Multiple customers may be considered in Energy-Plus-Health program design including:

- ✓ The primary customer—the patient/energy rate payer, and
- ✓ Secondary customers—the utility/efficiency program funder, the health care payer and/or health practitioners, and/or additional program collaborators seeking to receive a benefit from the program in exchange for resources provided.

4.5.4 Program Delivery

Energy-Plus-Health programs can take a range of forms based on local goals and resources. Some programs may be led by the efficiency PA while others are coordinated by the health partner. Efficiency PAs, CBOs, and health care providers may each play the following roles:

- ✓ Deliver customer referrals, engagement, and enrollment.
- ✓ Provide funding for outreach, marketing, implementation, data collection, tracking, and reporting.

Roles will ultimately be market-specific and may vary based on partner capacity and skills.

4.5.5 Program Funding

Potential sources of seed and/or long-term funding for Energy-Plus-Health programs include:

- ✓ Efficiency program research and development (R&D) funds.
- ✓ Utility merger settlements or rate cases.
- ✓ Program partners.
- ✓ Philanthropists (utility and health).
- ✓ Government grants.
- ✓ State budget allocations.
- ✓ Industry sponsors.
- ✓ Customers.
- ✓ Health payers.

Energy-Plus-Health programs seeking long-term sustainable funding through health care operational funds, Community Benefits Funding, Pay for Success investment frameworks, Medicaid waivers, or other health care reimbursement models (as described in [Section 5](#)) will need to include health market-specific design considerations during program development, such as:

- ✓ Specific certifications for in-home assessors and contractors, such as the BPI Healthy Home Evaluator certification.
- ✓ Specific targeted populations or illnesses.
- ✓ Reporting requirements for health-based reimbursement.

[As discussed in Section 2.2.3](#), changes to cost-effectiveness tests can support a broadening of programs beyond incentives and rebates for health-related efficiency measures. PAs with program cost constraints can partner with local health departments, lead-hazard abatement programs, or community-based organizations with a healthy homes mission to lay the groundwork for long-term coordination of an Energy-Plus-Health program.

4.5.6 Program Spending

The following tips are recommended to maximize program impact while stretching available dollars:

- ✓ Ensure a wide range of energy efficiency, indoor environmental quality and basic housing rehab/repair measures are eligible to be covered by the available funding.
- ✓ Set maximum and average target spending levels per home.
- ✓ Provide a stepped program that delivers basic energy efficiency services and a light-touch healthy homes service to all eligible customers, followed by a deeper healthy homes touch for customers who have specific health conditions that will benefit from more expensive interventions.

4.5.7 Program Integration and Scalability

Consider the following during program design to enable long-term program participation and scalability:

- ✓ Potential for early wins to showcase program benefits.

- ✓ Integration of with existing healthy homes programs such as in-home asthma intervention programs.
- ✓ Integration of tracking and reporting metrics into the existing processes of health and efficiency implementation providers.
- ✓ Systematic implementation processes across all providers.
- ✓ Program consistency and applicability across PA and health provider service territories.

PAs with clear goals for long-term Energy-Plus-Health strategy results will easily identify additional design elements specific to their market during the discovery phase of program development.

4.5.8 Health Considerations for Retrofit Materials

Evidence regarding the health concerns associated with some retrofit materials during production, installation and/or use is growing. Given that Energy-Plus-Health programs may target more chemically sensitive populations and populations that are more likely to become chemically sensitive once exposed to new materials, it is important to include considerations for material evaluation in program design. The following resources provide industry-wide guidance for identifying materials of concern and acceptable alternative products with lower risk factors:

- ✓ [A Guide to Healthier Upgrade Materials](#)³⁸
- ✓ [Declare](#)
- ✓ [BuildingGreen](#)
- ✓ [HomeFree](#)
- ✓ [The Red List](#)

Additional tips for materials include:

- ✓ Provide clear language in program disclosures and through in-home education to inform customers of possible risks associated with materials of concern,
- ✓ Provide fresh material samples to customers prior to installation to identify any immediate reactions customers may have, and
- ✓ Follow all manufacturer and industry association best practices for materials storage and installation to reduce risk of chemical off-gassing due to improper installation techniques.

4.6 Train Program Collaborators and Facilitate Ongoing Communication

Good program designs involve representatives from all partner sectors and customers. However, the program design phase rarely includes all individuals necessary for full program implementation because partner representatives may change. After finalizing program design, training the delivery team is critical for consistent and successful program delivery. Training may need to be repeated if staff change and new partner representatives join the collaborative later.

³⁸ Energy Efficiency for All, Making Affordable Multifamily Housing More Energy Efficient: A Guide to Healthier Upgrade Materials, <http://www.energyefficiencyforall.org/resources/making-affordable-multifamily-housing-more-energy-efficient-guide-healthier-upgrade>

Training tips include:

- ✓ Cover the why and how of healthy homes through energy efficiency.
- ✓ Use explicit process flows to teach the why and how of the program.
- ✓ Offer interdisciplinary training with delivery team members, allowing for additional program refinements that emerge from the training process.
- ✓ Offer technical training for implementation staff, including worker safety, hazard identification and remediation, healthy home principles, and health-specific certifications such as asthma certified educator and motivational interviewing.
- ✓ Use experiential learning techniques in the classroom *and* field providing opportunities for role-play and hands-on demonstration.
- ✓ Record appropriate elements of the training and maintaining program updates in a central location to provide on-going training throughout the program implementation phase to accommodate new team members onboarding.
- ✓ Send program detail reminders throughout the program delivery phase as the span between customer enrollment and project completion can be long.

Regularly scheduled check-in meetings can support continued team engagement, program progression and integration of lessons learned during implementation. Meetings need not be long, in-person, or include the full team, but consistency and ensuring the most essential team members are present are important.

4.7 Program Evaluation and Reporting

Tracking, reporting, and evaluation of program outcomes is dependent on stakeholder priorities and program goals. Common metrics include:

- ✓ Referral status and completion of services.
- ✓ Program measures, costs, timelines.
- ✓ Health outcomes using medically validated tools such as pre- and post-project health surveys and tests.
- ✓ Air quality and environmental quality testing pre- and post-intervention.
- ✓ Energy and carbon impacts.
- ✓ Customer satisfaction.

Reviewing project-specific and program outcomes achieved to date throughout program implementation can allow for mid-program modifications to improve overall program delivery and results.

To accelerate development of Energy-Plus-Health programs industry-wide, it is essential to report on program results and lessons learned to industry associations and stakeholders. Submittals of reports and issue papers to public health, medical, and energy industry journals can help further identify relevant metrics and methodologies, and funding sources for programs.

4.8 Energy-Plus-Health Program Challenges and Mitigation Strategies

Many lessons have already been learned about common challenges for Energy-Plus-Health programs. Table 2 summarizes possible program challenges and mitigation strategies.

Table 2 Mitigation strategies for common Energy-Plus-Health challenges.

Program Challenges	Mitigation Strategies
Delayed or insufficient customer enrollments	<ul style="list-style-type: none"> • Customer-centric program design • Develop targeting strategy to identify patients/clients through health care partners, community organizations, energy programs, housing partners, and public health offices; tailor engagement strategies based on customer-type (renter vs homeowner, low-income vs moderate-income, etc.). • Engage health care partner through education and training in energy efficiency services and products (i.e., if they improve their own home they are more likely to experience the benefits of better indoor environments). • Provide partners (especially health care providers) specific answers to Frequently Asked Questions from customers receiving information about the program and during program participation; provide partners with resources for referring customers to PA for answers.
Customers with housing-related health issues not meeting <i>all</i> eligibility requirements	<ul style="list-style-type: none"> • Create a stepped program design providing basic Energy-Plus-Health offerings to all customers, with deeper options to eligible customers • Offer multiple program pathways to allow for variable income levels and health conditions (for example), without detracting from results of each program option.
Customer health risks and co-morbidities ³⁹ potentially influencing program outcomes	<ul style="list-style-type: none"> • Design program with partners based on desired outcomes and establish requirements for existing health conditions that address co-morbidities. • When funding is limited, target eligible patients with specific illnesses for deeper program offerings. • Health partner screens for unacceptable health conditions that could (a) pose additional risks to patient health (such as overall health picture too poor to undergo home remediation) or (b) skew program results (such as smoking) when program evaluation methods do not adequately account for impacts of co-morbidities on program results.
Customer readiness and follow-through impacts on program success	<ul style="list-style-type: none"> • Qualified program partner delivers self-managed care and behavior counseling to prepare eligible customers for program participation. • Develop clearly written scopes of work including customer responsibilities, and review verbally with customer, who gives written consent. • Follow-up with customer at 3, 6, and 12 months post-intervention by health care provider (in clinic, home, or phone) and energy partner to ensure behavior persistence regarding health and home modifications, such as green cleaning, medication adherence, ventilation system use and maintenance and thermostat operation.
Protecting customer privacy and HIPAA requirements	<ul style="list-style-type: none"> • Obtain legal approval of customer consent forms and partner MOUs (see Legal Concerns Regarding Health Care Collaborations and Risk Mitigation). • Create secure customer data portal with anonymized data sharing. • Create secure communication systems for partner tracking and reporting.

³⁹Co-morbidity is the simultaneous presence of two chronic diseases or conditions in a patient.

Program Challenges	Mitigation Strategies
<p>Managing the complexity of combining multiple resources that each have differing application requirements, potential overlaps in program scopes of work, and complex program timelines</p>	<ul style="list-style-type: none"> • Identify opportunities to streamline systems to meet funding and program application requirements. • Integrate into customer consent forms approval language for sharing non-health information—such as approval for one program to disclose customer financial information to another program so the customer submits financial documentation just once. • Choose a designated, centralized resource coordinator to oversee approvals of and implementation of scopes of work. Coordinator functions. • Ensures all program participation consent forms and evaluation tools are completed and reported. • Manages scheduling of and hand-off between program partners for home repair services and client health support. • Coordinates any financial and payment administration tasks, as needed. • Is easily accessible for contact/inquiry from the customer and all implementation service providers. • Coordinator oversees onboarding of new collaboration partners and representatives that join after initial program launch, often due to team member turn over or program expansion. Provides orientation and re-trainings during multi-year implementation cycles to ensure all stakeholders understand individual roles and responsibilities and meet established accountability commitments.
<p>Project prioritization on limited budgets</p>	<ul style="list-style-type: none"> • Maintain clear boundaries for project scope of work and processes for prioritization of services within a residence, and projects across the program, with built-in flexibility for meeting complex housing issues. • Integrate ongoing evaluation systems for project costs and impacts into overall prioritization and selection process. • Adopt specific criteria and processes for integrating external resources into project delivery.
<p>Inconsistencies in project implementation</p>	<ul style="list-style-type: none"> • Establish clear guidelines for care standards that achieve systematic health care engagement and in-home visitation/follow-up processes, integrated into health care tracking and reporting systems. • Ensure qualified service implementation providers are (e.g. WAP partners or BPI Healthy Home Evaluators) available during program delivery period, trained on unique program processes. • Create and implement systematic assessment, measure prioritization, and measure implementation processes with quality assurance procedures.
<p>Extended program timeline</p>	<ul style="list-style-type: none"> • Discovery and customer-centered program design: anticipate 6-12+ months for these phases. • Program implementation: 18–24 months. Anticipate extended timeline (6+ months) from customer enrollment to project completion, longer (12 months) when braiding in external resources; add another 12 months post-project completion for full project outcome evaluation. • Program refinement and evolution should be ongoing throughout program delivery cycle, ideally documented with scheduled program evaluation intervals.
<p>Long-term program funding / reimbursement</p>	<ul style="list-style-type: none"> • Identify and engage funding prospects early to ensure program design aligns with funding requirements. • Braid multiple programs that have existing long-term funding mechanisms through formal agreements with dates as far into the future as possible. • Establish quality data tracking and reporting systems to validate and document program challenges, solutions, benefits and outcomes.

4.9 Legal Concerns Regarding Health Care Collaborations and Risk Mitigation

Cross-sector collaborations among regulated industries require stepping into unfamiliar territory and mitigating risk. When delivering residential programs, energy efficiency programs should limit risk exposure associated with entering and working in customers' homes. Broadening a program design to include health information is likely to raise red flags for legal counsel, risk management, and regulatory departments. PAs should become familiar with the internal and external legal and regulatory pathways for successful program design. Common issues include: customer consent, health information privacy, disclosure, data security, avoiding misrepresentation to customers and collaborators, doing no harm, and managing adverse or unexpected program impacts.

Existing programs in New York and Vermont have created replicable mechanisms to mitigate risk. Success factors include thoughtful consideration of program design, clear program guidelines and training for implementers, customer consent at a sixth-grade reading level (including language translation services), well-documented scopes of work and agreements, and ensuring that health care partners are the sole entity to collect and view health-related data.

Program administrators have well-established procedures and protections for providing in-home assessments, installing retrofit measures, and protecting customer utility data. Similarly, health care entities have strict compliance systems in place for HIPAA requirements that protect patient health data. Program partners should document mutually agreed-upon provisions in Memorandums of Agreement to mitigate risk.

Many energy efficiency programs already have customer data protection and communication systems that are sufficient for an Energy-Plus-Health program. Even so, the organization should review the maturity of these systems to determine if they can protect customer information and meet best-practice guidelines for secure data tracking, reporting, and communications.

Not all program partners and subcontractors will have the same level of security measures in place. This is another good reason for formal agreements between partners that include documentation of processes and training, to ensure mutual understanding and compliance with issues like security. Each organization launching an Energy-Plus-Health program should evaluate its security measures for compatibility with the program design. It is important that any security needed for the program remain effective in the long term, accommodating orientation, training, and staff turnover so that compliance is institutionalized. Most important, every program should assess its own specific risks and seek legal counsel to mitigate them.