Asthma Home Visits: The Three-Visit Model

How Washington State partners are approaching asthma home visiting

Background

The three-visit model was created in 2011 by the Washington State Department of Health in partnership with the Cowlitz County Health Department. It is now being offered to other home visit programs across Washington State. The model is adaptable to different settings including public health organizations, community health centers, clinics, hospitals, and schools. It can be effectively implemented using community volunteers, Medical Assistants, Community Health Workers, or other paraprofessionals as home visitors.

This tool kit was created to inform organizations who may be interested in starting or redesigning an asthma home visit program about the three-visit model and our experiences using it in Washington. The tools and experiences in this tool kit are not intended to replace normal training that home visitors should receive prior to providing home visiting services to the public. Organizations are encouraged to seek proper training and education for their home visitors. Training may include topics such as home visitor safety, motivational interviewing, trigger reduction, medication adherence guidelines, and proper device use. Free or inexpensive training opportunities may be found through local or state health departments, hospitals, asthma coalitions, or non-profits such as the American-Lung Association.

The three-visit model has two main purposes.

1. Assess and increase the participant's knowledge about their disease and how to manage it.
2. Identify and eliminate triggers in the home.

Visit 1: Gather basic information about the participant and their asthma control

The first home visit focuses on assessing the participant's level of understanding about their disease and their use of prescribed medications. Motivational interviewing is used throughout the visit to identify needs that the participant is most motivated to address. Towards the end of the visit, three triggers are identified and information on how to mitigate those triggers is shared. The three triggers tend to be easily addressed with little or no investment other than time by the participant or their family. This may include strategies such as taking shoes off at the door, fresh air ventilation, using exhaust fans, and how to address mold that may be present in the home. *To download an editable Home Visit 1 form, see Appendix 2. To download an editable Participant Recommendation List, see Appendix 5.*

Visit 2: Conduct a home assessment

The second visit is scheduled one month following the first. The participant is again asked about their medications and if they have any questions or stories to share from the previous visit. The home visitor identifies any changes in the participant's medication use and technique that may impact their asthma. The home visitor then focuses on trigger identification and elimination by walking through the entire residence using the home visit 2 form which includes environmental assessment questions. Initially, focus is on removing triggers that are free or low cost such as increased vacuuming, keeping pets out of the bedrooms, and removal of air fresheners. Costly fixes are discussed and may be referred to the landlord or a plan created if the residence is owned. *To download an editable Home Visit 2 form, see Appendix 3.*

Visit 3: Provide follow-up and reinforcement

The third visit is scheduled one month after the second. It ties together the previous two visits, addresses any remaining challenges, and reinforces successes. During this visit, medication use is again assessed and appropriate use is reinforced. Behavior changes are reviewed, challenges are addressed, and overall success is noted. Any questions, concerns or challenges the participant and their family have encountered over the last two visits are reviewed. Positive reinforcement is given for behavior change or knowledge gained. If capacity exists within the program, a fourth visit may be scheduled if the participant or their family feels more assistance is needed. This may especially be helpful if the participant has not achieved a score of 19 or above on the Asthma Control Test (ACT). Additionally, the home visitor acts as a bridge between the participant and their healthcare provider. If needed, a home visitor may give a list of nearby providers to the participant or help place a call to a provider's office or pharmacy. With the family's permission, the home visitor may also share visit information with the participant's provider. *To download an editable Home Visit 3 form, see Appendix 4.*

6-week follow-up call:

A follow-up phone call made six weeks after the final visit is also part of the intervention. The call helps keep the participant engaged in the information from the three previous visits, offers support if needed, and gathers data on long-term behavior changes in the home. *To download an editable Follow-up Call form, see appendix 7.*

Timing

The timing of the visits is an important piece of the effectiveness of the program. The reason each home visit is scheduled approximately one month apart is to ensure enough time for change to happen, but not too much time that the participant might forget about their recommendations from the home visitor. Six weeks after the third visit, it is recommended that a follow-up call be made by the home visitor to check on the participant's progress and review recommendations.

Tailoring the model to meet individual programs' needs

The three-visit model forms and tools created at the Washington State Department of Health are editable and available for others to use. This allows any program to tailor the forms for their specific needs. Each program may add or subtract questions or tools depending on their organizational needs. *To download editable tools, see the appendix of tools section at the end of the document.*

Participant recruitment, retention, and feedback

Currently, in Washington State, all asthma home visit programs are free to participants. Some programs are able to provide incentives to participants such as mattress and pillow covers, vacuums, or walk-off mats. The recruitment and retention of participants through all three visits can be a challenge for programs. Some helpful strategies include:

- **Having a trusted relationship with and receiving referrals from a clinic or hospital** dramatically increased programs' recruitment and retention levels. Participants may feel an obligation to follow their provider's advice. They may also feel more confident in a home visiting program that is recommended by their healthcare provider.

- **Sometimes it helps if the home visitor meets the participant and their family prior to scheduling the first home visit**. This meeting could take place over the phone, but preferably in person at the clinic, health department, or other neutral place.
- **Incentives help**. Especially if they are items the participant can use to help control triggers, such as a vacuum, green cleaning kits, spacers, or mattress and pillow covers. It's best to spread the incentives throughout the visits. This may motivate participants to complete all three visits.
- **Know the materials.** Make the visit as fluid as possible. Knowing the materials well can provide more one-on-one interaction, which can improve rapport. Participants may be more receptive to further visits if they feel their concerns have been heard and responded to appropriately.
- **Be prepared to refer participants to community resources that may help them address other life challenges**. Individuals may have concerns such as domestic violence, food insecurity, unstable housing, mental health issues, or other health-related issues. When participants face other challenges, asthma may not be their first priority. Be prepared to provide contact information for community resources that can help participants address other concerns. After receiving help for other life challenges, they may be able to better focus on controlling their asthma symptoms.
- **Word of mouth goes a long way**. Carry extra business cards and information about your program in case one of your participants knows someone who would benefit from the program. Positive word of mouth recommendations and community acceptance can often be the main source of program credibility. *To download an editable Program Brochure, see Appendix 13.*
- **Administer a participant feedback survey** after the participant has completed all three visits. Keep the survey anonymous and provide a "respond by" date. If administering a paper survey, include a self-addressed, prepaid return envelope. Use this information to address barriers and opportunities within the program. *To download an editable Participant Feedback Survey, see Appendix 14.*
- **Send reminder and thank you cards**. Sometimes participants have so much going on in their lives they forget about their scheduled home visit. Remind participants via email, mail, and/or phone about their scheduled visit. If participants aren't home for their home visit, leave a "sorry we missed you" card on the door. Personalized and hand-written thank you cards have been well received in Washington programs and help establish a trusted relationship with the program. *To download an editable Sorry We Missed You Card, see Appendix 6.*

Tracking data

Some metrics that can be tracked through each visit include:

- Level of asthma control at each visit via the Asthma Control Test
- Use of medications as prescribed
- Hospitalizations due to asthma
- Emergency room visit due to asthma
- Urgent care visits due to asthma
- Missed school or work days due to asthma
- Percentage of clients with a primary care provider
- Percentage of clients with an Asthma Action Plan

- Action items and behavior changes that are incorporated into their daily care regimen

Tracking data and program efficacy may be essential for obtaining or keeping a program's funding. Being able to provide outcome data to funders may be critical in decision makers' choice to continue a program. Having strong data can also help with program recruitment and retention when potential participants can actually see results other participants have achieved. There are many tools to track program data including Excel spreadsheets, electronic health records, or customized computer programs. *See Appendix 11 for an example Tracking Log.*

Lessons learned

Establishing a sustainable, reputable, and cost-effective home visiting program takes time and dedication. Some helpful lessons learned include:

- **Know your population**
  - **Language**. If the majority of the target population does not speak English as a first language, providing bilingual home visitors is more time- and cost-effective than using translator services.
  - **Culture**. Knowing what's culturally important and appropriate to participants is key to affecting behavior change. One size does not fit all. Being culturally knowledgeable about the families served can help build rapport and trust, which may also help with participant retention.
  - **Geography and air quality**. Partnering with local clean air or environmental agencies can help inform your program about asthma triggers specific to your region. For example, some areas of the state may have heavy woodstove use or periodic weather inversions. Other areas may have heavy agriculture and pesticide use, or are located near busy roadways and industrial areas.
  - **Economic status**. The ability for a participant to achieve asthma control has been linked to economic status. Families living in poverty face significant barriers such as the cost of medications, access to care, or poor housing conditions. Other factors may impact a family's ability to follow recommendations. It is important to be knowledgeable and have information about other local programs such as housing advocacy, food assistance, and free clinics.
  - **Use motivational interviewing**. Motivational interviewing is a strategy of working closely with participants to identify health needs, set realistic goals, and solve problems. By asking the right questions in an open and non-threatening way, home visitors can help identify needs most important to the participant. Since the participant is directly involved in identifying areas in need of improvement, they may be more motivated to actively make long lasting behavior changes.
- **Work closely with local clinics and hospitals**. As mentioned in the participant recruitment and retention section, working closely with local hospitals or clinics can be highly beneficial to home visiting programs. It's important to set up a dynamic feedback loop between the home visiting program and the participant's primary healthcare provider.
- **Utilizing low-cost resources can be beneficial**. The three-visit model has been tested using AmeriCorps members, Community Health Workers, Medical Assistants, and community volunteers as home visitors. As long as staff are appropriately trained and supervised, there is no need to hire professionals such as registered nurses or physicians for home visitor positions. As noted in the background section, proper training may include home visitor safety, motivational interviewing, trigger reduction, and medication adherence guidelines, and proper device use.

- **Partner with other local organizations**. Partnering with local organizations such as a local health jurisdiction, state health department, schools, community centers, or faith based organizations can help a program succeed. Trusted community organizations can help spread the word, recruit participants, and endorse your program. They may also be able to help with staff training, securing funding, or obtaining resources.
- **Promote your program to health plans and other payers**. Stable and on-going funding for Washington programs has traditionally been challenging. An array of funding has been used over the last few years. Some programs are clinically supported while others operate with limited grant funding. The implementation of the Affordable Care Act has potentially provided opportunities for a greater expansion of services statewide. This includes expansion of payments for asthma home visiting through Medicaid, Center for Medicare and Medicaid Innovation, and private payers.

Success stories & outcomes

The three-visit model can be a low-cost and effective intervention for asthma management. The tables below show various Washington programs' success in increasing asthma control, proper medication use, use of asthma action plans, and participant access to primary care. The programs also show success in decreasing hospitalizations, emergency room visits, urgent care visits, and missed school or work days.

Based on clients who completed all three home visits, Washington programs found the below overall results*:

	Poorly Controlled Asthma**	Use of Medications as prescribed	Hospitalizations due to asthma	Emergency room visit due to asthma	Urgent care visits due to asthma	Missed School/ Work Days	Clients with Primary Care Provider	Clients with an Asthma Action Plan	Average behavior changes per client
All Programs	68% decrease	95% increase	81% decrease	79% decrease	74% decrease	57% decrease	42% increase	112% increase	4

Visit Table

	# of Clients who have uncontrolled asthma		# of Clients who Use Medications as prescribed		# of Hospitalizations due to asthma		# of Emergency room visits due to asthma		# of Urgent care visits due to asthma		# of Missed School or Work Days due to asthma		# of Clients with a primary care provider		# of Clients with an Asthma Action Plan		Average # of behavior changes per client
	Visit 1	Visit 3	Visit 1	Visit 3	Visit 1	Visit 3	Visit 1	Visit 3	Visit 1	Visit 3	Visit 1	Visit 3	Visit 1	Visit 3	Visit 1	Visit 3	Visit 3
Cowlitz County Asthma Outreach Program *(36 clients served, 2 years)*	22	6	7	11	1	0	4	0	12	1	28	5	21	30	2	13	5
Clean Air for Kids *(35 clients served, 1 year)*	21	12	7	16	8	0	26	0	41	12	31	24	n/a ***	n/a ***	n/a ****	n/a ****	3
Yakima Valley Farm Workers Clinic Asthma Program *(140 clients served, 6 months)*	63	11	47	83	10	1	31	10	63	15	36	8	n/a ***	n/a ***	54	106	3
Seattle Indian Health Board Asthma Program *(17 clients served, 1 year)*	16	10	1	11	3	3	22	7	40	12	26	14	n/a ***	n/a ***	n/a ****	n/a ****	5

**Percent change calculated among programs who tracked this measure.*

*** In this case, poorly controlled asthma is defined by having an ACT score of 19 or less.*

****YVFWC and SIHB did not track whether the participant had a primary care provider because all participants are referred directly from providers within the clinic the program is housed in. CAFK also did not track whether the participant had a primary care provider because most referrals come from a clinic or hospital.*

***** SIHB and CAFK did not track whether their participants had asthma action plans. This is a question in the visit, and an asthma action plan would be provided if a participant didn't have one, but the measure was not tracked.*

Many asthma home visiting programs administered participant feedback surveys that included success stories from people who completed all three visits. Below are some stories of success.

"The bleach odor no longer existed and the ionizer on the air purifier was lighted off. When we had the client demonstrate her medication use, she inhaled correctly and confidently. We asked how her asthma was and she stated that she no longer woke up in the night because of symptoms. She acknowledged that she hadn't followed through with all the suggestions we made, but that she was keen to slowly tackle them. She also wanted us to visit the rest of her families' homes to help them remove asthma triggers."

- *Cowlitz County Asthma Outreach Program, 2012*

"Roger's final ACT score was 17. He told Brandi, "I feel like a whole different person, you made me aware of my surroundings." Brandi noted that "He wasn't short of breath when he was trying to talk – I could tell he was feeling great." Even though Roger's ACT score still has room to improve, he's going outside and involved in more activities now. His quality of life has greatly improved."

- *Seattle Indian Health Board, 2013*

"They stay in touch to see how you are doing and they've given me a lot of helpful information not just about my asthma but about things I can do around the house to help make my life more comfortable."

- *Port Gamble S'Klallam Tribe, 2011*

In addition to improving outcomes as shown in the table above, participant surveys also show high satisfaction with the program, the amount of time involved, and the information and recommendations they received. Because of the demonstrated success of the Washington State three-visit model, many other programs are now using it.

Conclusion

The three-visit model is just one way to approach asthma home visiting. There are many other models in existence, and each one will have its own successes and challenges. To find out if there are other asthma home visiting programs in your area, reach out to organizations such as the local American Lung Association, state or local health departments, or nearby asthma coalitions. By using a standardized model, organizations can easily track the efficacy of their programs, compare data, work together to troubleshoot barriers, and collaborate on obtaining sustainable reimbursement for intensive asthma education services.

Appendix of tools

The tools below are intended for use by new or existing asthma home visiting programs. Microsoft documents are editable and readers have permission to adapt the tool for their own use.

1. Program Materials Checklist
2. Home Visit 1 form
3. Home Visit 2 form
4. Home Visit 3 form
5. Participant Recommendation List
6. Sorry We Missed You card
7. Follow-up Call form
8. Asthma Control Test for Adults
9. Asthma Control Test for Children age 4-12
10. TRACK for Children age 0-4
11. Sample data tracking log
12. Program Flyer
13. Program Brochure
14. Participant Feedback Survey

Additional resources from Washington programs

- Asthma Home Visit: Return on Investment fact sheet
- Seattle-King County Healthy Homes Project
- Better Home Visits for Asthma
- Home is Where the Triggers Are
- Home Visits Help Farm Workers Live Better with Asthma

For more information, contact:

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