NEW HAVEN HEALTH LEADERS

A Community Stakeholder Training Program

COHORT 1 EVALUATION REPORT

CARE

Community Alliance for Research and Engagement

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EXECUTIVE SUMMARY

The Community Alliance for Research and Engagement (CARE) conducted an evaluation of its New Haven Health Leaders (NHHL) program, funded by the Patient Centered Outcomes Research Institute. Through this program, CARE aims to break barriers to community engagement in research at Yale by developing a network of community stakeholders equipped to partner with Yale investigators. The NHHL program builds the knowledge, skills, and confidence that residents need to be equitable research partners at Yale and drive forward community engaged research in New Haven.

The evaluation of the NHHL program assesses participants experiences with and perceptions of the program, including satisfaction with the program, confidence to engage in research, and knowledge of research processes. To assess these measures, the evaluation utilized a curriculum feedback survey to measure satisfaction with the curriculum and pre- and post-surveys to determine changes in confidence and knowledge. Additionally, the evaluation captured participant's experiences and perspectives, including potential areas for improvement of the program, through qualitative interviews. Finally, surveys were given to investigators and research team members to evaluate their experiences with the program. Key findings are summarized below and are detailed in the full report that follows.

- Participants were very satisfied with the 3-session training curriculum with responses becoming increasingly more positive as the training went on. Participants strongly valued the built-in group discussion aspects of the training and emphasized the value of learning from each other and hearing about their experiences. As a result of the 3-session training curriculum, participants indicated that they had increased confidence in measures of leadership ability, ability to understand health-related data, ability to work with communities to prioritize health issues based on data, and working with research investigators. Knowledge scores saw the largest increase with significant changes for every knowledge item, including processes of conducting research, how to involve New Haven residents, knowledge about CBPR, and knowledge about PCOR. Respondents also really appreciated the idea of research partnerships and having community stakeholders, such as the Health Leaders, at the table and having their expertise valued positively.
- Of those that participated in the monthly cohort meetings, many participants reported that they felt going to the monthly meetings was really helpful for hearing other perspectives and creating an opportunity to network amongst each other.
- At the end of the program, participants maintained measures of increased confidence and knowledge that was seen after the initial 3-session training including increased knowledge of social determinants of health, health disparities, data collection tools, and differences between qualitative and quantitative data. An additional major theme that emerged was participants feeling more empowered and confident in their unique contributions to research in their communities.
- Lastly, the majority of the investigators and researchers who responded to the survey reported an overall positive experience with engaging Health Leaders, with 60% of researchers saying they were very or extremely likely to involve a Health Leader in future research projects and an additional 27% reporting that they were moderately likely to engage a health leader in the future.

Recommendations for future cohorts include more time for training of Health Leaders and Investigators as well as more time for research-community teams to work together. Specific expectations and processes could be laid out in advance and CARE support maintained for investigators throughout the program. Continuation of Health Leader and Investigator engagement after the program is encouraged.

INTRODUCTION

NEW HAVEN HEALTH LEADERS

In 2018, the Community Alliance for Research and Engagement (CARE) launched the New Haven Health Leaders (NHHL) program. Through New Haven Health Leaders (NHHL), CARE aims to break barriers to community engagement in research at Yale by developing a network of community stakeholders equipped to partner with Yale investigators. The NHHL program builds the knowledge, skills, and confidence that residents need to be equitable research partners at Yale and drive forward community engaged research in New Haven. The NHHL program acknowledges the history of research being conducted on communities without the input of the target population – namely people of color – in the study design processes. Residents receive training in Community Based Participatory Research (CBPR), Patient-Centered Outcomes Research (PCOR), health inequities, and social determinants of health as well as research ethics and study components. They are paired with Yale research teams to provide community expertise and perspective to research taking place in New Haven.

AIMS

The NHHL objective is to train a sustainable network of community stakeholders, ready to engage equitably in Community Based Participatory Research (CBPR) and Patient Centered Outcomes Research (PCOR) at Yale.

1) Recruit residents to participate in NHHL, with an emphasis on people of color and people from low-income communities.
2) Train residents across the research spectrum on CBPR/PCOR principles.
3) Cultivate Resident-Yale investigator teams to collaborate on research projects with NHHL bringing a CBPR/PCOR perspective.

PROGRAM DESIGN

The NHHL program will train 24 New Haven residents over two years. Two cohorts of residents attend monthly training sessions on:

- Chronic disease and health disparities
- CBPR and PCOR
- Research design and implementation
- Research ethics
- Data interpretation
- Dissemination of research

In addition, Health Leader gain experiential education, collaborating with Yale investigators on a research project in New Haven. Teams are supported to implement CBPR/PCOR engagement practices

into community settings through project activities. Opportunities for co-learning are emphasized throughout the project period. Teams are mentored by CARE staff, as well as peer leaders, to complete community-guided activities to enhance a current research project that would benefit from a community perspective. The program length for each cohort is eight months.

EVALUATION

The purpose of this investigation is to better understand and improve the New Haven Health Leaders program and to assess progress towards the aims and outcome, described herein. The evaluation of New Haven Health Leaders includes four components:

1) *Curriculum Feedback Satisfaction Survey*: For the first three months of the Health Leader program, CARE provided intensive training sessions once a month. The anonymous Health Leaders Curriculum Feedback survey included questions related to satisfaction with the initial 3 session training program, administered after each session. Participants responded to seven statements on a 5-point Likert scale from *strongly disagree* (0) to *strongly agree* (5). The survey was administered after each of the three training sessions to better understand satisfaction and to make program improvements. All statements were positively stated. For ongoing program improvement, responses from the Curriculum Feedback Satisfaction Survey and data from the Curriculum Fidelity Form were summarized and reported back to program staff prior to the following session.

2) *Pre/post Program Surveys*: To assess change in confidence and self-reported knowledge, a survey was administered before and after the initial 3-session training (Time 1 and Time 2) and at the end of the program (Time 3) after Health Leaders worked with Yale investigators and research teams.

3) *Post-Program Health Leader Interviews*: At the end of the academic year, program participants were asked to complete qualitative interviews exploring their experiences as New Haven Health Leaders (NHHL). The interviews were voluntary and did not affect their involvement with the program. An interviewer who was unaffiliated with the program conducted individual interviews with each health leader. Of the 13 health leaders, 12 responded. Questions addressed why participants joined the program, their experiences working with research teams, perspectives on and recommendations for the program. All interviews were recorded, transcribed, de-identified, and thematically coded by two coders.

4) *Research Team Survey*: To assess satisfaction with the program, and areas for improvement, research team members responded to an end-of-program survey. The survey was sent via email to 19 investigators; 16 investigators responded. The survey contained items including satisfaction and experience with NHHL program. Questions included role of researcher and Health Leader, benefit of Health Leader for research, level of engagement and preparation of Health Leader, level of support from CARE team, likelihood of involving and recommending a Health Leader in the future, and program successes, challenges, and recommendations. Closed-ended items were on a 5-point scale, ranging from 'not at all' to 'extremely' (1-not at all, 2-somewhat, 3-moderately, 4-very, 5-extremely). Open-ended items were thematically coded.

REPORT STRUCTURE

The report provides details on Health Leaders' and researchers' perspectives and experiences, with specifics around the following:

- **Health Leaders' Experiences:** Section 1 focuses on Health Leaders' experience with various aspects of the program:
  - Health Leaders' satisfaction with and impact of the initial 3-session training curriculum
  - Health Leaders' experience in the research partnership
  - Health Leaders' monthly support meetings
  - Impact of program for Health Leaders
- **Health Leader Feedback and Suggestions**: Section 2 focuses on the feedback and suggestions from Health Leaders.
- **Investigators Perspectives:** Section 3 focuses on the Investigators' perspectives and experiences with various aspects of the program:
  - Investigators' perspectives on the pre-program investigator training meeting
  - Investigators' experience engaging with Health Leaders
  - Support from CARE
  - Suggestions for Improvement
  - Investigators' willingness in continued engagement
- **Next Steps and Recommendations:** Section 4 provides recommendations for the improvement and continuation of Health Leaders.

It should be noted that the lead evaluator and staff are internal to CARE. The evaluation team seeks to provide a transparent evaluation report to provide information on outcomes and insights for program improvement.

Additional data details are provided in the Appendix.

1. HEALTH LEADERS' EXPERIENCES

INITIAL 3-SESSION TRAINING CURRICULUM

The program began with a 3-session training program. These sessions were held once a week for three consecutive weeks.

Satisfaction: Overall, the vast majority of participants were very satisfied with the 3-session training curriculum, agreeing or strongly agreeing with each positive statement in the Curriculum Feedback form administered after each module. Statements included organization of the session, amount of material covered, relevance, and overall satisfaction with the session, as well as whether the participant understood the material, was more confident in the material after the session, and would recommend the session to others. Based on feedback, program improvements were made for subsequent sessions related to the discussion and activity time allotted, pace of information relayed, size of the training space, and beverages offered. Of note, while participants' responses and feedback for Module 1 were positive overall, they were slightly more positive for Module 2 and 3, with all participants (100%) agreeing or strongly agreeing with each item. (See Appendix, Section 1: Tables 1-6)
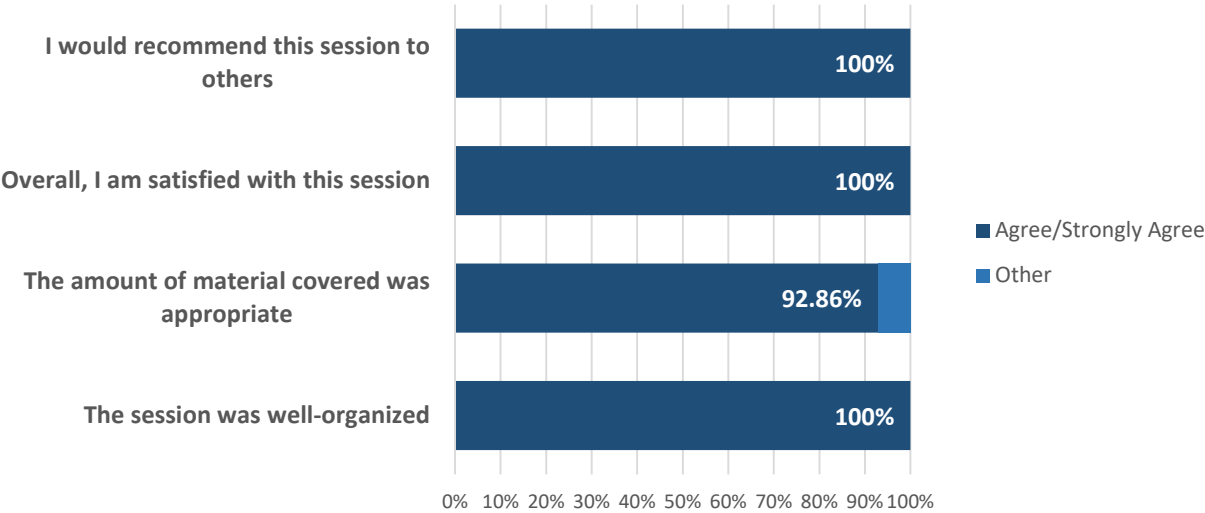
Results of the Module 1 Curriculum Satisfaction Feedback Survey

Qualitative themes that emerged from participant feedback included the value of group discussion, citing how learning from peers and hearing about their experiences was one of the most valuable components of these training sessions. Major areas of the curriculum were also cited as most valuable to participants: learning CBPR and PCOR principles, how to collect and analyze data, how to research existing data, and the group activities. One participant stated: "*The training that we got, I thought that was actually really good. Like the core, basic training at the very beginning.*" Some participants reported that too much material was covered in the given timeframe of a given session. (See Appendix, Section 1).

> **" *So that training component was excellent, very robust. I thought that was wonderful.* "**

Confidence and Knowledge: Based on the initial 3-session training survey (pre/post: Time 1 and Time 2), on average, participants reported increased confidence and knowledge for each confidence and knowledge survey item. On a 7-point scale with 7 being the highest, on average, confidence scores increased 0.52 points (range: 0.38-0.76 increase) and knowledge scores increased 1.32 points (range: 0.69-2.00 increase). Significant changes include increased confidence in leadership ability, understanding of health-related data, ability to work with the community to prioritize health issues based on data, and working with research investigators.

Change in Scores on Confidence Items

Vertical axis: 1 to 7

Horizontal axis: (T1) Pre-Training Mean — (T2) Post-Training Mean

Legend:
- Confidence in leadership abilities
- Confidence in ability to understand data
- Confidence in ability to work with community
- Confidence in ability to engage with investigators
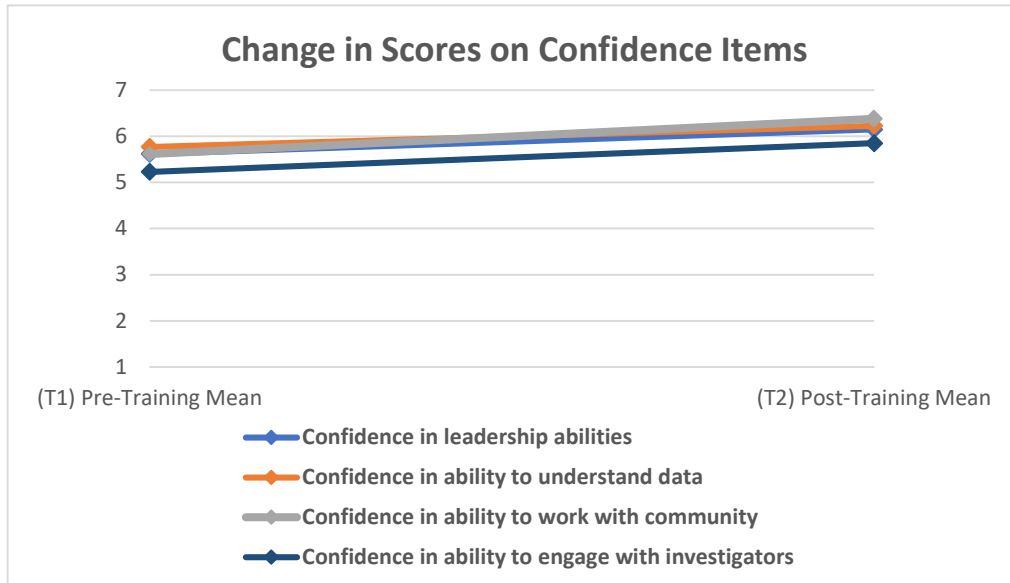
Significant changes were noted for each knowledge item; scores increased most for items receiving the lowest scores pre-training: knowledge about PCORI, CBPR, the process of conducting a research study, and the different ways New Haven residents can be involved in research studies. (See Appendix, Section 2: Tables 7 and 8.)

Change in Scores on Knowledge Items

Vertical axis: 1 to 7

Horizontal axis: (T1) Pre-Training Mean — (T2) Post-Training Mean

Legend:
- Knowledgable about process of conducting research
- Knowledgable about involving New Haven residents
- Knowledgable about CBPR
- Knowledgable about PCOR
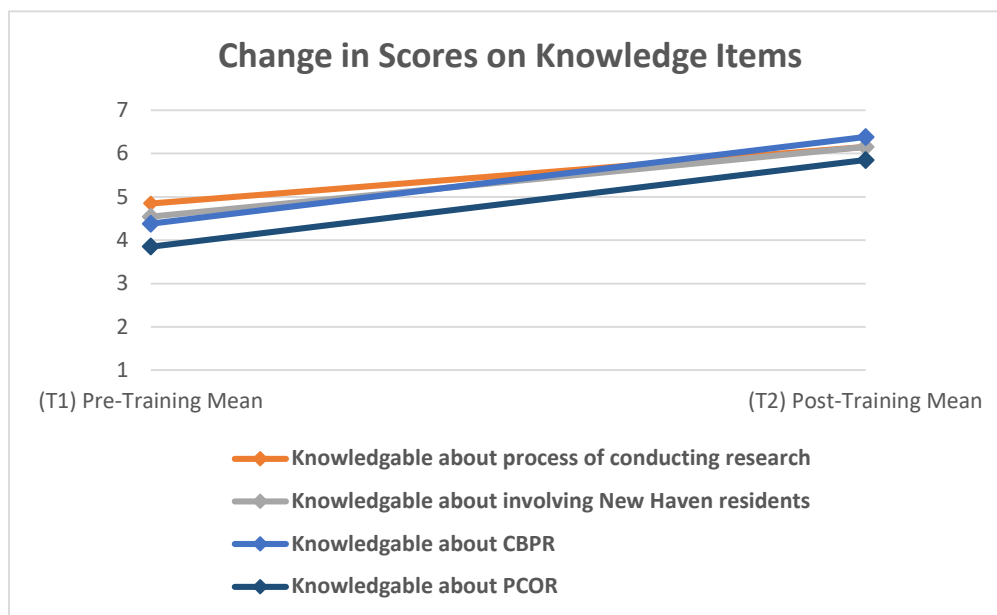
Based on the initial three training sessions, participants cited in both the feedback surveys and the post-training survey (T2) that they felt more prepared to use these skills and gained knowledge to improve their community or relate it back to their community. The post-training survey showed that many participants felt they had gained new knowledge or skills in conducting and disseminating research. Other participants who may have existing research skills named new learnings that will help them have an impact on their community. A few cited how they hope to have an impact on social justice and health equity using CBPR and PCOR skills.

Some participants requested that the discussion time become more structured in the orientation trainings and monthly meetings. This change would allow for more time to ask questions about the curriculum, research practice, and specific skills. (See Appendix, Section 2)

> " … I learned the differences between CBPR & PCOR, different research methods, resources in New Haven … ways to spread the word of research findings. The importance of sharing data with the community.

RESEARCH PARTNERSHIP

Contribution of Health Leader to Research Team: Health Leaders contributed to researcher teams in a variety of ways. Researchers reported that Health Leaders provided insight on study enrollment and community engagement and partnerships, provided input and feedback on community-facing materials, consulted on recruitment and retention strategies, created questionnaires for providers and patients, contributed ideas pertaining to working with students as well as improvements to project, participated in advisory program, and attended CAB meetings. Health Leaders provided recommendations for developing a Community Advisory Board and for revision of recruitment, consent, data collection, and dissemination materials. They also developed materials and infographics for disseminating study information.

Several Health Leaders described their work on the research teams and their contributions:

> *We created a directory of like community leaders and community organizations. Community meetings that happen. We created some infographics for them and were able to provide feedback on the infographics that existed already. And just sort of played in a role in how they approach outreach and community engagement. And it was so early in the research process, that there was a lot of room for that; room for figuring out how to recruit, and where to recruit, and what sort of partnerships should be made to make the future of that study successful, but also like helpful for the community. So I feel honored that I played a role in that, and was a part of that.*

Another explained their project as: *"…trying to figure out what it is that the patients wanted, what the providers wanted, and what they thought would be best to make the process more effective once the patient had physically left Yale."*

Some noted how they introduced different ideas of CBPR and PCOR to the research teams and emphasized the importance of the community guiding the research. Specifically, this resulted in a refined programmatic approach that maximized community participation in one research project.

> **"**
> *I feel like some of these researchers are more worried about keeping their positions and not stirring the pot, versus really worrying about how the community feels about them being there, and how they can give back to the community.*
> **"**

For some projects, the role of the Health Leader was unclear at the beginning of the partnership. Some were quickly clarified, and others struggled a little longer to get settled on the Health Leaders' role on the team. Both the Health Leaders and the investigators were unclear on their role in some cases. Some Health Leaders believed that they would be out in the community ('in the field') doing work and talking with the community. Others were frustrated with not knowing details of the research project and having differing perspectives on community involvement; some discussed the need for greater transparency in research, including access to data and having community at the table. One noted that researchers may just continue doing what was done before them instead of disrupting the system: *"They were so bound by the constructs of this is how we do things"*

Another noted, "there were some things we just felt were not taken in or accepted as – they were not as welcomed as we thought that they would be."

Health Leaders who had positive experiences often noted that they felt supported and heard by their research team. Many Health Leaders felt their ideas were respected and integrated into the project:

"I liked them because they really took what I was saying into consideration. Like they didn't just nudge me and push me to the side. 'Oh, she don't know what she's talking about.' They really took my information, or what I was saying, and put use to it."

> **"**
> *I liked them because they really took what I was saying into consideration.*
> **"**

"I think they were really receptive, and they really respected it, and they were open to the – they .. listened. So I think it was great. They were really good about accepting what we had to give them."

The high value placed on relationships and interpersonal dynamics is aligned with PCOR principles, and often led to a successful experience even if the research project did not go as planned.

Dual Role as Community Member and Researcher Team Member: In interviews, Health leaders expressed myriad of feelings towards their dual roles as community members, and now, members of the research teams.

> **An opportunity for residents of New Haven to engage in research that is actively happening in New Haven, for New Haven, about New Haven.**

Health Leaders sentiments were often influenced by the efficacy of communication within their research team and between research teams and communities; the lack of transparency in communities where research takes place; and the alignment – or misalignment – of research projects with community needs.

Participants with strong role clarity and agency cited a number of ways in which they could address these problems, including serving as an advocate and connecting research teams with community leaders and organizers:

> *"they see somebody like their own coming to help them, coming to get information from them, I think they'd be more open to it. And I think they'd be more receptive to me telling them something as long as I have the knowledge."*

Some health leaders talked about the inherent tension of participating as a community member on a research team and the importance of transparency:

> *Because the way I kind of started feeling was -- at the end, was like we were consultants, and not.... not partners. And I get it, we're not part of the research protocol, but at the same time, you are creating something for this research project to utilize. And so most research projects pay consultants to do that. And their names are attached to all of these materials and things. So like I said, will our names, or the names of future participants, be utilized, when they're providing these materials? We don't know what capacity -- they could make a presentation and say, "oh, we created this [product]," when in fact, it was myself and my partner. And oh, this is a great idea, and we're going to implement this, and there's no recognition. Or they can say they created this [product] and totally alter how we created it, and then say, "oh, this was done by participants at CARE for this project that they worked on." So it kind of goes both ways. So it kind of makes it a little rough when you're thinking -- you're working so hard in your community to create a rapport and be trustworthy, and make sure that you're for the community. But then you have work out there that you have no idea -- can go either way.*

Authentic interaction with the community remains important to Health Leaders; a health leader explains so clearly in this excerpt, *"our face remains in the community"* while the researchers do not.

MONTHLY COHORT MEETINGS

After the initial 3-session training, Health Leaders met monthly to discuss projects and research concepts. Monthly cohort meetings provided a place to talk about their experiences as community members on the research team. The monthly cohort meetings appeared to be a crucial component of the NHHL program, especially in terms of achieving research goals, gaining resources, having a support system, and in continued learning.

> " *I think the monthly meetings were a good place for us to discuss how we were feeling about the work we were doing. The opportunity to create more networking opportunities amongst each other; to create friendships amongst people in the community that we work with, and that we probably see on a regular basis but don't interact with.* "

The group dynamic was built on participants' mutual experiences of living in New Haven and their shared commitment to *"keeping the community at the center and the core of it all."* The cohort meetings provided a space to reflect, to share successes, to process difficulties or frustrations, and to support one another:

I think hearing other perspectives -- like going to the monthly meetings and hearing other perspectives really helped to broaden like where I'm at, and how I view things. I tend to have more of a -- I'm fully aware of like injustices that exist, but I tend to have more of a cheery, glaze over it. Whereas like, some people were really bitter to, this is the reality, and this is how these people feel about it. And like I'm aware of those things, but just hearing people talk about it kind of throws you back into that reality.

> " *If you believe that you can be the voice -- that you can kind of be that liaison that the community needs, and that the researchers need, and you want to build on those skills. You want to build on that relationship; join this program. Because you will learn a lot. Because every experience is like a learning lesson. And I feel like hearing from the health leaders itself was really refreshing. And learning that like, you're not the only person that believes in the research, that believes in the community. And sees for them to have forged, if you will, of having established, good relationships.* "

PROGRAM IMPACT

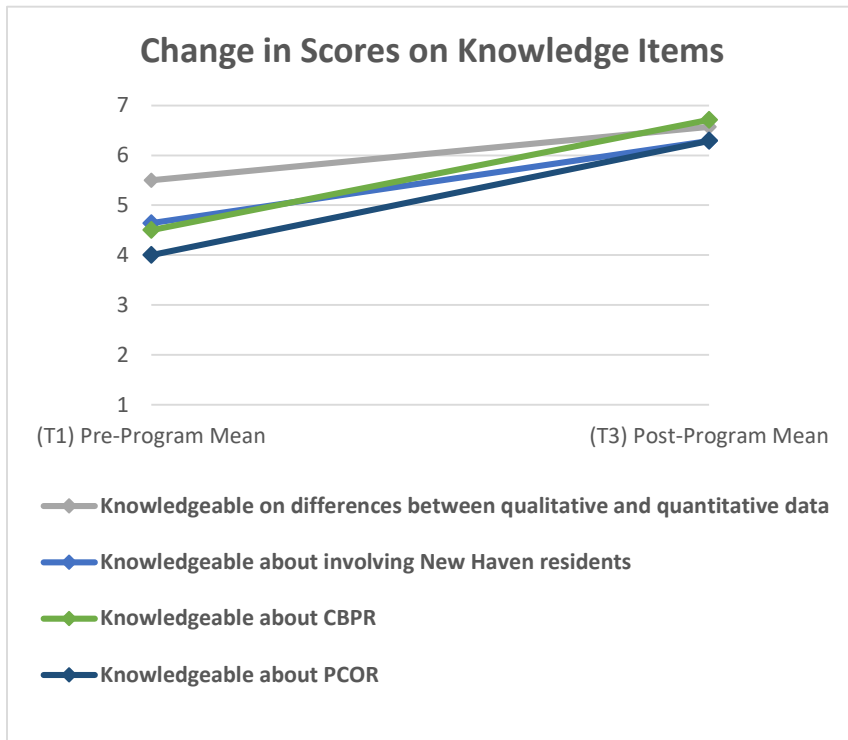Captured by the end-of-program survey, Health Leaders maintained increased confidence and knowledge seen after the initial 3-session training. Additional themes were identified through the end-of program qualitative survey items and Health Leader interviews. Participants reported what they gained personally from the program, including increased networking, self-awareness, and overall research abilities. Additionally, they identified gains in understanding research from a CBPR/PCOR perspective. Health Leaders reported that their participation in the program helped them to support their communities. Program impact on Health Leaders confidence and knowledge, personal and professional growth, and interest in community-engaged research are detailed below.

Confidence and Knowledge Change*: At end-of-program (Time 3) participants evidenced significant increased confidence and knowledge from baseline in leadership abilities, ability to contribute to a research study, ability to work with their community to prioritize health issues based on data, and to engage with research investigators. (See Appendix, Section 3.)

Change in Scores on Confidence Items

Legend:
- Confidence in ability to contribute to a study
- Confidence in leadership abilities
- Confidence in ability to work with community
- Confidence in ability to engage with investigators

X-axis: (T1) Pre-Program Mean — (T3) Post-Program Mean
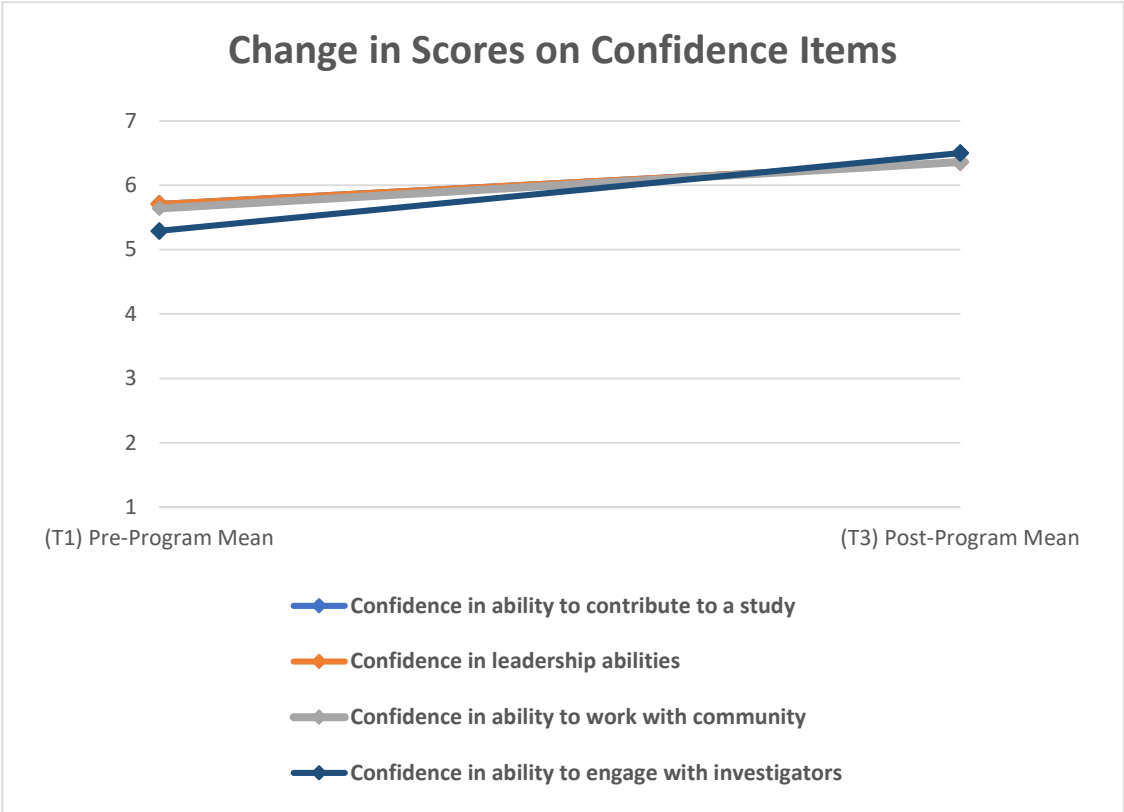
*confidence in ability to contribute to a research study under line for confidence in ability to work with community.

They also reported increased knowledge about social determinants of health, health disparities, the process for conducting a research study, various data collection tools (including surveys, observations, and focus groups), the difference between qualitative and quantitative data, the different ways New Haven residents can be involved in research studies, and increased knowledge about Community Based Participatory Research and Patient-Centered Outcomes Research.

Change in Scores on Knowledge Items

- Knowledgeable about social determinants of health
- Knowledgeable about health disparities
- Knowledgeable about process of conducting research
- Knowledgeable about various data collection tools

Change in Scores on Knowledge Items

- Knowledgeable on differences between qualitative and quantitative data
- Knowledgeable about involving New Haven residents
- Knowledgeable about CBPR
- Knowledgeable about PCOR

Health Leaders maintained their confidence and knowledge from after the initial three training sessions to end-of-program and on average increased in confidence in working with research investigators by engaging on a Yale research team. From the end of training, before starting working with research teams (Time 2), to after working with research teams (Time 3), Health Leaders reported an increase in the confidence in their ability to engage with research investigators (p=0.055).

> *I felt they [my contributions] were well received. Initially, I was kind of like, wow, me really? You just kind of don't – sometimes you think that you might not be 100% ready for what is being handed to you; I know I felt like that, especially at first. But as it progressed, you know you see that, a little bit of that change to have more confidence about – that these are the things that can be handled.*

Personal Growth: Participants emphasized the confidence they gained by their unique ability to address community-based concerns in their research roles. Participants also gained skills in project assessment, stating they learned what it takes for a CBPR- or PCOR-based research projects to be successful.

I would say one thing that I got out of it was like my confidence in myself…. Just like realizing that I do have important knowledge, knowledge that's important to this work. Just being involved in the community, and part of the community. That that is a valuable voice in that kind of work. I think hearing other perspectives -- like going to the monthly meetings and hearing other perspectives really helped to broaden like where I'm at, and how I view things.

I think I was really lucky because my PIs were very open. And they -- I appreciated that they expected so much from us. I appreciated that they respected us and our opinions, and our knowledge of the community. And they gave us … responsibilities that … I was happy to take on. So again through that improved my confidence in being in that environment. And removed a little bit of that imposter syndrome, where I feel like I don't really belong in that area, or that I'm not really knowledgeable about that stuff.

Professional growth: Health Leaders also reported learning about the research process as well as growing as a communicator and advocate.

I got to really see what it was like, putting together a program from kind of the ground up. Like assisting with the IRB process, creating materials, stuff like that; that was all new to me. I learned about it in class, but it was a lot different actually creating things that people were actually going to be using during the program.

…this experience really established that I do want to become an effective advocate.

> *...[W]hat I got from the program itself, I think it was really rich for the short amount of time that we had. And I think that the final project was amazing, what people were able to produce and present was amazing.*

Interest in community-centered research: Health Leaders emphasized the importance of keeping their communities in focus while working in community-based research. They emphasized the need for increased community voices in current and future research projects that work in their communities. They highlighted the importance of including community opinions in research and that the community is a vital resource for research which should be respected and not underestimated.

Several quotes that exemplify these perspectives include:

There is a community appetite and desire to be involved with no longer hav[ing] Tuskegee experiments reduplicated, but rather, having true public health translation of research benefits.

I am excited to get involved with research in the future and am aware of the importance of ensuring that the community guides the research. (end-of-program survey)

> *And also just how to make sure every member of your team is involved in learning about how to be in the community. I think that was lacking from a lot of the research teams in the program. And I think in my future career, I want to make sure any staff I'm on, any group I'm working with, everyone is involved in talking to community members about the work we're doing. Especially if it's going to have some kind of impact on their lives in the short or long term period.*

2. HEALTH LEADER FEEDBACK AND SUGGESTIONS

FEEDBACK

Participants specifically highlighted the camaraderie they felt from their NHHL cohort, as well as from CARE staff, overall reporting a very positive experience. Most participants stated having a positive experience with their research team as well.

Health Leaders were appreciative of the program and spoke highly of the program and the CARE team. One stated:

> I, again, just absolutely love CARE and their work. Because it appears that the staff that I have met are people who are really committed to New Haven too. I'm a New Havener and I've been here all my life. So I've seen people who want to come in and do research, but really have no interest in the community; it's really just the results of the project for them. … And how you leave the people is not of [their] concern. I don't feel that from the staff at CARE that I've been working with. So when I do explain this program, because people are weary about research, I explain that. The people that you're going to be working with are people who care about New Haven.

> One discussed how this program is breaking barriers between research and the community by considering *"how can we start really building new relationships between – and not having relationships based on assumptions; actually kind of breaking down those barriers, breaking down those doors.*

> **"**
> *I tried to emphasize to them [the CARE team] that they are like abolitionists – they are fighting the civil wars –it's so important what they're doing.*
> **"**

When asked how they would describe the program to others, one Health Leader stated:

> I think I would tell them that if they really wanted to learn how research works, that they should sign up. If you have any reservation about research, sign up. Ask questions. This gives you the opportunity to see some of these research projects behind closed doors. I think it would give a better understanding of the inner workings and the difficulties that they—the difficulties are there. How can you as a community member make an impact? And I think this is like a starting platform for people in the community to gain awareness, gain some understanding, and have the opportunity to voice their concern…

Others noted:

> *I think I would describe it as a program that matches community members with research projects, to serve kind of – not a liaisons or research assistants, but kind of advisors and consultants on how to make those projects more community based, and more inclusive of community needs.*

> *If you want to learn about how important research is, to community improvement efforts, to community development, to community change, like, be part of this program.*

> *It's going to be a lot of work, a lot of community work …. But it's a great reward to know and understand the expectations and the realities of what you're dealing with. And I would just tell them, "do you care about the community that you're around? Do you feel like there are public health needs that haven't been addressed? Do you feel like there is a lack of communication, or a lack of relationship, between researchers and the community? Do you think that we will ever learn from the lessons of Tuskegee and Henrietta Lacks? Do you think that we're going to learn from that?" And if you want to take the time to actually do that, I think this program is a step in the right direction.*

Some mentioned how it was bigger than just a program.

> *This is such a critical new venture. It's roughly 60 years late. So the challenge is, can it make up for 200 years of malfeasance and medical oppression? In spite of the good intentions.*

SUGGESTIONS

Asked to suggest areas for improvement, participants had structural feedback regarding the program design, mostly in relation to timing issues and clearer expectations. Overall, health leaders had constructive criticism for how to improve the research experience in the NHHL program; such as ideas for how to improve communication, timing,

Participants expressed wanting to see the New Haven Health Leaders program continue to grow and evolve. Select quotes from different participants that exemplify these perspectives include:

I think the program is great, the longer it's around, the more likely New Haven will see change in the research culture canvas!

This was an amazing experience. The work and effort that was put into this program shines brightly through the CARE staff and team as well as the New Haven Health leaders.

Much needed and one of a kind. Keep up the tremendous work! Excited for the next several cohorts.

I enjoyed the program, I thought everybody was awesome. They are absolutely wonderful, so kudos to them, and honestly to the program for having such amazing leaders and managers. It has just been a blessing to work with them.

I would describe it as one of the best groups I've been on.

To me it was a great experience, with its challenges, but overall, it was a great experience

mutual understanding of expectations, and vetting the research teams who partnered with CARE on this program.

Timing and Expectations: Time was a major concern for participants, who felt there was not adequate time to accomplish their research goals. Many health leaders cited scheduling conflicts as a barrier to them feeling like they fully participated in the research. Some wondered whether researchers were used to working with graduate students, rather than community members who work full-time and have families. Most of the health leaders stated that the program needed to be longer, and perhaps start at a different time in the year. Participant observed multiple time related issues:

> *…this opportunity of running the program parallel to the academic year is not in the best interest of community health leaders, because many of these research programs already have graduate assistants working on those positions that we could have been working on. But the summer months creates an opportunity for more.*

> *My project wasn't like 100% completed by the end of it because of time. Timing, schedules, and there was no real expectations. So I kind of had to decide for myself what it was that I wanted to do. So yeah. I would say on the actual project side, it was more like navigating a new environment and partnerships with the organization.*

> **"**
>
> ***I don't feel we made enough of an impact in the small amount of time to get them to really understand where we were coming from. And, like I said, I think that would have helped a little more if we would have had a longer timeframe with them***
>
> **"**

The amount of time Health Leaders had available was also an issue which Health Leaders said may not change but could be clearer to research teams upfront, *"letting researchers know that we do this as sort of a side hustle. We have full-time jobs."*

One participant noted a lack of structure and how unclear expectations created challenges. Participants offered examples of how having more time, a more clearly defined role, and a dissemination plan would have been advantageous to the health leader and to the research team.

The health leaders also asked CARE to be prepared for when research projects do not turn out as expected, like having a back-up plan in case a research project falls through (or becomes very delayed):

> *…there was no safety net when the research changed. So for us, our project, the research changed…. Thankfully, my partner and I were able to produce a product, but there were some teams that didn't. And so I think that being able to readjust, or have a backup plan for when the research changes is [sic] really important…*

Trainings: Some Health Leaders suggested instituting shared trainings and orientations for the research teams and the Health Leader and additional training for the research team on expectations and roles.

> *I wouldn't change any aspect of the project itself except I would give probably the research team a little more training, so that they can gain an understanding of what we were tasked to do. But other than that, I think it was pretty good.*

One Health Leader noted that a co-training session may have alleviated some struggle by Health Leaders sharing with researchers what the Health Leaders and program overall are trying to address about research.

Transparency was mentioned by a few Health Leaders. They suggested CARE address this in advance with research teams.

> **"**
> *I think it would have been a great opportunity to have a collective training with the health leaders, in conjunction with the researchers. Not only for the training purposes, but also or sort of like team building.*
> **"**

> **"**
> *And just letting them know that we're seeking transparency, I think that's important. And having a list of things that these researchers are not willing to bend on is important. I recall some of our team members struggling with some of the questionnaires, and not being allowed to make edits or changes to the questionnaires.*
> **"**

Health Leaders also suggested more system-wide trainings on PCOR and CBPR principles for all researchers stating: *"…there's a lack of – and this is a systemic issue obviously – there is a lack of training on topics like these."*

Related to their own training, one Health Leader recommended returning to initial training topics to keep them fresh, and *"to make sure we are always hyper-aware of it, and like understand it completely and fully."* Others noted an interest in getting through all the material in a given meeting. One stated: *"I would have loved to like get through the lesson, because I'm not as knowledgeable about these things."*

Another noted: *I don't think there's anything that [I would suggest to change] – I think that what they taught was actually very helpful, in knowing how to work with the research teams.*

Sentiments about the final poster were mixed. One Health Leader noted that it may be useful for some projects but not others based on the state of the research study. Some Health Leaders mentioned the posters were successful and another noted it was ineffective.

The majority of participants expressed they felt supported by CARE during this unique program. Overall, Health Leaders really liked the program and wish to see it continue and evolve.

3. INVESTIGATOR FEEDBACK

TRAINING

Ten of the 16 investigators that responded to the investigator survey attended the pre-program investigator training meeting; this included four Principal or Co-Principal/Senior Investigators and six program managers/staff representing five of the eight teams. Participants reported positive experience in terms of content delivered describing it as 'excellent,' 'informative,' 'helpful,' and 'impactful.' Several participants enjoyed meeting other teams and hearing about their projects and experience in the field. One participant noted that it may be 'preaching to the choir' as not all investigators attended, questioning whether those that were in attendance were more community-oriented in approach. (Of the three researchers who had reported no prior experience with CBPR (n=16), one attended the training meeting.) Three researchers specifically mentioned learning about New Haven as insightful or helpful. Remarks were overwhelmingly positive, including a suggestion for developing the meeting into a regional conference.

How prepared were you to engage Health Leaders into your work?

- Very/Extremely
- Somewhat/Moderately

While perspectives on the initial training for researchers was overwhelmingly positive, only 33% of researchers (n=5) reported being *very* or *extremely* prepared to engage Health Leaders when the program started.
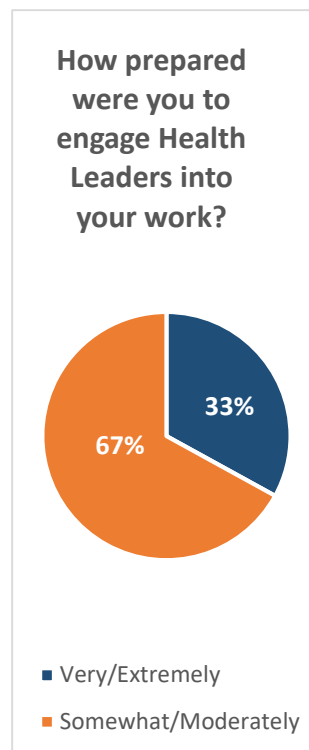
ENGAGEMENT WITH HEALTH LEADERS

Researchers expressed a range of experiences with engaging Health Leaders. Among respondents, 50% of researchers (n=8) reported the involvement of Health Leaders was *very* or *extremely* beneficial to their research, with an additional 13% reporting *moderately* beneficial. Most (69%, n=11) reported that Health Leaders were *very* or *extremely* engaged.
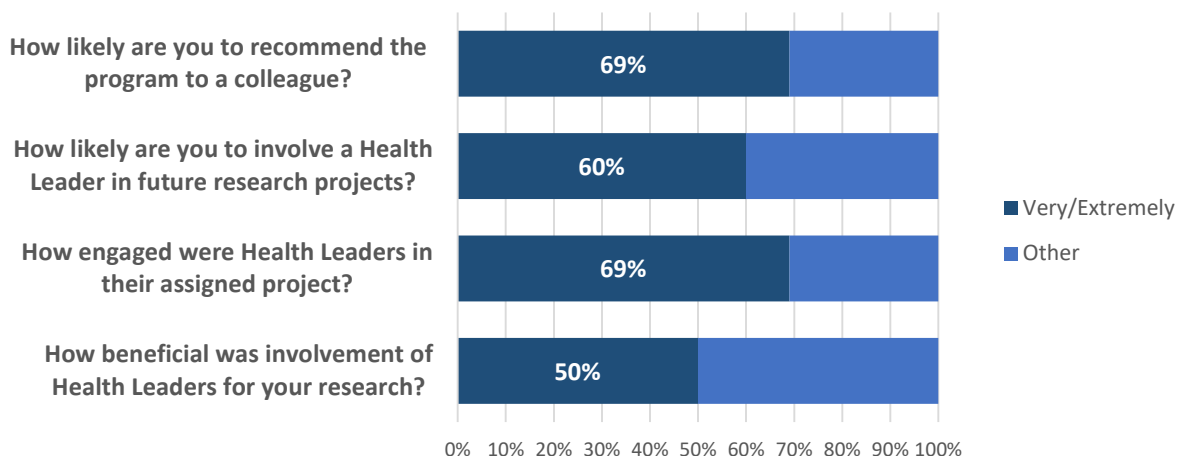
On a scale from 1-5 [1-*not at all*, 2-*somewhat*, 3-*moderately*, 4-*very likely* and 5-*extremely likely*], most researchers (87%, n=13) reported that they would be *moderately*, *very,* or *extremely* likely to engage a Health Leader again, with 60% reporting being *very* or *extremely* likely (mean: 3.87). Most (88%, n=14) would be *moderately*, *very,* or *extremely* likely to recommend a Health Leader to a colleague who is seeking to engage community members in their research, with 69% reporting being *very* or *extremely* likely to recommend a Health Leader (mean 3.94). For researchers newly exposed to CBPR, the experience seemed to expand their interest in CBPR; all researchers without prior experience with CBPR indicated that they would be moderately to extremely likely to engage a Health Leader in their research again.

Internal and external barriers were noted. A few researchers expressed concerns about their experience with their Health Leaders, noting the Health Leader(s) they worked with did not always follow stated processes and were not consistently engaged or responsive, stating a need for improved communication. Other teams noted the restrictions of their grant presented barriers to implementing some ideas.

A testament to research team successes: one team reported hiring their Health Leader as full-time staff and another hired a Health Leader to continue as a consultant on their project.

SUPPORT AND ROLE OF CARE

Most researchers (88%, n=14) reported feeling *moderately*, *very* or *extremely* supported by CARE during the program, with 63% reporting being *very* or *extremely* supported. Others reported not feeling supported and recommended CARE provide additional support for researchers in future cohorts. Researchers noted the need for more preparation on the front-end specifically engaging study staff on expectations prior to program initiation. It was noted that Health Leaders needed more supervision by CARE staff and more training in research protocols. Responses from research team members regarding perceived support from CARE were similar within teams, with differences seen across teams (average scores for teams: 1.5 to 4.5).

SUGGESTIONS FOR IMPROVEMENT

Researchers also noted specifics aspects that could be clearer upfront: time constraints of the Health Leaders, specifically their commitments outside of the program and conflicting schedules, clarifying expectations of the Health Leader and the team, and providing examples of successful ways to partner. Researchers recommended structural changes: increasing length of program, increased weekly involvement of the Health Leader, starting the projects earlier in the academic year, and offering a meet-and-greet in the beginning of the partnership to increase investment. They also suggested increasing supervision with more CARE check-ins with investigators and Health Leaders. A suggestion was made to provide training to Health Leaders that coincides with stage of the research study. Considering sustaining community-based participation in research, suggestions included "compiling cross-site/cross-investigator facilitators and barriers for Health Leader participation so that cross-

campus goals/objectives might be drafted and advocated for in partnership with [other] groups" and sharing lessons learned across research team experiences and Health Leader cohorts.

Several researchers expressed enthusiasm for CARE and the program with comments such as "fantastic job" and "excellent group and leadership." Another stated:

> **This program is so amazing that the only recommendation I have is to increase the amount of time with [health] leaders.**

CONTINUED ENGAGEMENT IN PCOR/CBPR

Most of the researchers were interested in continued engagement. Eleven of 16 (69%) were interested in connecting with the alumni network for engagement of Health Leaders on future projects; 10 (63%) were interested in receiving ongoing information/resources on PCOR and CBPR on the CARE website, and 11 (69%) were interested in other PCOR/CBPR learning opportunities. One researcher suggested hosting a repository of successful models of PCOR/CBPR on the CARE website. Another was interested in collaborating on creating system-wide protocols for community partnerships for the analysis and dissemination of data.

4. NEXT STEPS AND RECOMMENDATIONS

The findings indicate participants were satisfied with the trainings and increased confidence and self-reported knowledge after participation in the New Haven Health Leaders program. Researchers responded positively to the Investigator training, encouraging continued trainings and more information prior to program initiation and support throughout program. These recommendations seek to support program improvements for upcoming cohorts.

Training of Health Leaders

- Health Leaders were interested in more time for the curriculum training. One training session contained too much material and time ran out as indicated by the curriculum fidelity assessment. Additional time for training and working on teams may be considered with future cohorts.
- There was no significant change from baseline to the end-of-program reported for Health Leaders' confidence in ability to understand health-related data, to share data with their community, and to collect data. This may relate to a modification in the program because the Community Health Needs Assessment Data were not available in time for their use. Future PCORI cohorts may gain confidence in understanding health-related data and sharing data with the community through reviewing and presenting CHNA data to their communities.
- To address concerns of Health Leaders' training, more instruction should be provided around research protocols and standards. Health leaders may benefit from returning to this topic throughout the program building on initial training.

Engagement of Health Leaders with Research Teams

- Expectations of Health Leaders and research teams should be documented; this may include tentative or suggested activities for Health Leaders. Teams may benefit from an initial meeting with CARE to clarify expectations with research team members and Health Leaders. Suggested activities may increase the benefit to research teams and Health Leaders engagement.
- CARE should meet with Health Leaders and research teams to discuss plans specific to each research team. Some topics that need to be discussed in advance include:
  - Amount of time per week Health Leader is available
  - Schedule each week that Health Leader is available/not available (or external commitments of Health Leader to set expectations)
  - Means of communication for Health Leader and researchers
  - Options for agreeable meeting times, and potential for participating in research meetings
  - Relationship as community fellow not intern, and the difference
- CARE should connect with research teams on a more regular basis to assess progress and address any concerns.

- CARE should design a more structured supervisory component to ensure Health Leaders are engaged and questions or concerns are addressed early.
- To allow ample time for engagement and impact, the program may consider extending the length of time Health Leaders engage with research teams.

Additional Trainings for Health Leaders and Researchers

- Initial training of researchers could include purpose of CBPR and PCOR and address barriers to engagement of community in research. While the focus of the grant was preparation of Health Leaders, for the program to have intended impact long-term, research teams will need more support and preparation.
- Transparency in research could be addressed in both the Health Leaders training and the Investigators training session. Additionally, CARE may look to conduct a session with both the Health Leaders and Research team on transparency and community engagement to increase dialogue and understanding of limitations, needs, and challenges.

After the Formal Program

- A feedback session at the end of the program could be integrated as a way to extend learnings and development, as well as continue engagement of research teams.
- Next steps for trained Health Leaders could be integrated into monthly sessions at end of the program to guide growth of Health Leaders and respond to Health Leaders interest in using skills learned and continuing engagement.
- Continue to reach out to former teams and Health Leaders with opportunities, resources, and trainings.

Acknowledgements:

APPENDIX

NHHL CURRICULUM SATISFACTION FEEDBACK

Table 1: Curriculum Satisfaction Feedback Average & Range (n=14)			
	% agree/strongly agree	average	range
1. The session was well-organized	100%	4.43	[4-5]
2. The amount of material covered was appropriate	92.86%	4.43	[3-5]
3. Overall, I found this session relevant to improving health in my community	100%	4.50	[4-5]
4. Overall, I understood the material being taught	100%	4.79	[4-5]
5. I am more confident in the material than I was before this session	92.86%	4.36	[3-5]
6. Overall, I am satisfied with this session	100%	4.64	[4-5]
7. I would recommend this session to others	100%	4.57	[4-5]

NHHL CURRICULUM FEEDBACK –Training Sessions 1-3

Session 1 Results: Curriculum Satisfaction Feedback

Table 2: Curriculum Satisfaction Feedback Responses by Scale Category						
		Strongly Disagree	*Disagree*	*Neither Disagree or Agree*	*Agree*	*Strongly Agree*	Percent "Agree" or "Strongly Agree"
		1	*2*	*3*	*4*	*5*	
1.	The session was well-organized	0	0	0	8	6	100%
2.	The amount of material covered was appropriate	0	0	1	6	7	92.86%
3.	Overall, I found this session relevant to improving health in my community	0	0	0	7	7	100%
4.	Overall, I understood the material being taught	0	0	0	3	11	100%
5.	I am more confident in the material than I was before this session	0	0	1	7	6	92.86%
6.	Overall, I am satisfied with this session	0	0	0	5	9	100%
7.	I would recommend this session to others	0	0	0	6	8	100%

Qualitative Feedback

Three open-ended response items were included in the curriculum feedback survey administered after each of the three modules:

- "What was the most valuable part of this session?"
- "What parts of this session were confusing or challenging?"
- "What changes or improvements would you suggest for this session?"

Structural feedback:

A few constructive comments in the first session called for a larger classroom, to help participants feel less "on top of each other" and provide more room for in-class activities. This was remedied by the third session, when a larger classroom became available. Timing was also a common theme in participant responses. Roughly 1/3 of participants cited that there was too much material for the given timeframe, or that the group discussion took up time, but was valuable.

Content feedback:

The value of group discussion among the participants was by far the biggest theme that emerged from Module 1. Participants valued learning from one another about their lived experiences, research experience, and ideas around the material covered. Another major theme was positive feedback on the research process that was covered in Module 1.

"Engaging in conversation w[ith] community members & hearing what's important in their specific neighborhoods."

"I enjoyed learning about the research process because it gave me a useful framework to view research work. I really enjoyed the participant discussion as well."

Session 2 Results: Curriculum Satisfaction Feedback

Table 3: Curriculum Satisfaction Feedback Average & Range		
	average	range
1. The session was well-organized	4.64	[4-5]
2. The amount of material covered was appropriate	4.64	[4-5]
3. Overall, I found this session relevant to improving health in my community	4.93	[4-5]
4. Overall, I understood the material being taught	4.71	[4-5]
5. I am more confident in the material than I was before this session	4.71	[4-5]
6. Overall, I am satisfied with this session	4.64	[4-5]
7. I would recommend this session to others	4.71	[4-5]

Table 4: Curriculum Satisfaction Feedback Responses by Scale Category							
		Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree	Percent "Agree" or "Strongly Agree"
		1	2	3	4	5	
1.	The session was well-organized.	0	0	0	5	9	100%
2.	The amount of material covered was appropriate.	0	0	0	5	9	100%
3.	Overall, I found this session relevant to improving health in my community.	0	0	0	1	13	100%
4.	Overall, I understood the material being taught.	0	0	0	4	10	100%
5.	I am more confident in the material than I was before this session.	0	0	0	4	10	100%
6.	Overall, I am satisfied with this session.	0	0	0	5	9	100%
7.	I would recommend this session to others.	0	0	0	4	10	100%

Qualitative Feedback:

Structural feedback:

Again, there were two requests for more time to learn the material, a recurring theme from the first session. Group discussion was cited as more "well-balanced" in this session compared to Module 1. There were a few requests for additional group activities or exercises to help participants understand the applicability of research concepts being covered.

Content feedback:

Group discussion was again often cited as the most important and useful aspect of the trainings:

"More than presentation - the conversations that were elicited were the most valuable part of this session."

A prominent theme in the second module was the value of using group activities to learn the material. In particular, the "vignette" exercise was positively received by multiple participants:

"The vignettes because we got to engage with how much we actually understand of the CBPR and PCOR material."

"The exercise at the end really tied everything together & made PCOR easy to understand."

Session 3 Results: Curriculum Satisfaction Feedback

Table 5: Curriculum Satisfaction Feedback Average & Range		
	average	range
1. The session was well-organized	4.85	[4-5]
2. The amount of material covered was appropriate	4.85	[4-5]
3. Overall, I found this session relevant to improving health in my community	4.85	[4-5]
4. Overall, I understood the material being taught	4.85	[4-5]
5. I am more confident in the material than I was before this session	4.85	[4-5]
6. Overall, I am satisfied with this session	4.85	[4-5]
7. I would recommend this session to others	4.85	[4-5]

Table 6: Curriculum Satisfaction Feedback Responses by Scale Category							
		Strongly Disagree	*Disagree*	*Neither Disagree or Agree*	*Agree*	*Strongly Agree*	*Percent "Agree" or "Strongly Agree"*
		1	*2*	*3*	*4*	*5*	
1.	The session was well-organized	0	0	0	2	11	100%
2.	The amount of material covered was appropriate	0	0	0	2	11	100%
3.	Overall, I found this session relevant to improving health in my community	0	0	0	2	11	100%
4.	Overall, I understood the material being taught	0	0	0	2	11	100%
5.	I am more confident in the material than I was before this session	0	0	0	2	11	100%
6.	Overall, I am satisfied with this session	0	0	0	2	11	100%
7.	I would recommend this session to others	0	0	0	2	11	100%

Qualitative Feedback:

Structural feedback:

By the third session, there was less critical feedback on the timing of the material: only two participants said that there was too much material for the given timeframe, and only one cited that it was a long time to sit. There was also positive feedback on using the larger classroom for the training.

Content feedback:

There was a lot of positive feedback on the group activities, with many participants requesting additional materials and activities to help learn how to disseminate data.

Module 3 included guest presenters, which the participants highly valued as part of the curriculum. Many participants said how valuable it was to see how research and data can be used in a real world setting. Many of the participants reported the guest presentations helped them come full circle with the material, showing them how research can be related back to their communities.

"The guest speakers were great today … [they] both gave great insights on how data is collected, disseminated, and how perceptions can play a role in data reporting."

"The guest speakers were amazing and really provide valuable and relevant experience/knowledge!"

NHHL PRE/POST CURRICULUM TRAINING PARTICIPANT SURVEY

Table 7	Change in Scores on Confidence Items (N=13)							
Confidence Items	**Pre-training Mean (SD)**	**Range**		**Post-training Mean (SD)**	**Range**		**Change in mean**	**p-value**
1. I am confident in my ability to contribute to a research study.	5.69 (1.25)	[3-7]		6.15 (0.90)	[5-7]		0.46	0.190
2. I am confident in my leadership abilities.	5.62 (0.77)	[5-7]		6.15 (0.69)	[5-7]		0.53	0.028
3. I am confident in my ability to understand health-related data.	5.77 (1.42)	[2-7]		6.23 (0.93)	[4-7]		0.46	0.053
4. I am confident in my ability to share health-related data with my community.	5.69 (1.65)	[2-7]		6.15 (0.99)	[4-7]		0.46	0.111
5. I am confident in my ability to work with my community to prioritize health issues based on data.	5.62 (1.39)	[2-7]		6.38 (0.96)	[4-7]		0.76	0.018
6. I am confident in my ability to collect data.	5.85 (0.90)	[4-7]		6.23 (1.17)	[4-7]		0.38	0.174
7. I am confident in my ability to engage with research investigators.	5.23 (1.42)	[2-7]		5.85 (1.07)	[4-7]		0.62	0.025
Average:	**5.64**	**[2-7]**		**6.16**	**[4-7]**		**0.52**	

TABLE 8	Change in Scores on Knowledge Items (N=13)							
Knowledge Items	**Pre-training Average (SD)**	**Range**		**Post-training Average (SD)**	**Range**		**Change**	**p-value**
8. I am knowledgeable about social determinants of health.	5.38 (1.26)	[3-7]		6.38 (0.77)	[5-7]		1.00	<0.001
9. I am knowledgeable about health disparities in New Haven.	5.54 (0.97)	[4-7]		6.54 (0.66)	[5-7]		1.00	0.004
10. I am knowledgeable about the process of conducting a research study.	4.85 (1.63)	[2-7]		6.15 (0.90)	[4-7]		1.30	0.001
11. I am knowledgeable about various data collection tools including surveys, observations, and focus groups.	5.46 (1.33)	[3-7]		6.15 (0.99)	[5-7]		0.69	0.032

12. I am knowledgeable about the difference between qualitative and quantitative data.	5.38 (1.33)	[3-7]		6.31 (0.75)	[5-7]		0.93	0.008
13. I am knowledgeable about different ways New Haven residents can be involved in research studies.	4.54 (1.71)	[1-7]		6.15 (0.80)	[5-7]		1.61	0.007
14. I am knowledgeable about Community-Based Participatory Research (CBPR).	4.38 (1.85)	[1-7]		6.38 (0.77)	[5-7]		2.00	0.001
15. I am knowledgeable about Patient-Centered Outcomes Research (PCOR).	3.85 (1.82)	[1-7]		5.85 (0.99)	[4-7]		2.00	0.002
Average:	**4.92**	**[1-7]**		**6.24**	**[4-7]**		**1.32**	

Qualitative Feedback:

- "What do you hope to gain from this program?"
- "Please tell us what you gained or learned from this 3-week training program."

A major theme that emerged from the pre- and post-training survey was the importance of sharing health information and research with communities. Several participants cited how they plan to use the research skills they learned to help their communities, by locating correct information and sharing it with their communities, and through their community relationships and work:

"I gained a better understanding of the framework that comes along with a research project. This training also further expanded on my thought processes that the community needs to receive more information on what ails it and what heals it. This training also made it easier for me to locate information essential to my community leadership."

"… I learned the differences between CBPR & PCOR, differen[t] research methods, resources in New Haven … ways to spread the word of research findings. The importance of sharing data with the community."

Several participants cited how they felt more prepared to conduct research from the skills they learned in these training modules. Two recurring themes were: "ability to conduct research" and "engagement with CBPR and PCOR principles and materials":

"I have honed my ability to critically evaluate data/study designs. I feel as though I have gained tools that will help me to better collect, interpret and therefore disseminate data."

"Learning about Community Based Participatory Research and PCOR radically changed the way I look at research."

"These past 3 weeks were very informative & interactive. It was great to hear & learn from several different researchers that are all doing different work & learn from their own experiences. Overall, this training has very much motivated me to do CBPR & PCOR to foster change & push for a more equitable New Haven."

NHHL PRE/END-OF-PROGRAM PARTICIPANT SURVEY

Table 9	Change in Scores on Confidence Items (N=14)						
Confidence Items	**T1 Pre-training Mean (SD)**	**Range**	**T3 Post-PROGRAM Mean (SD)**	**Range**		**Change in mean**	**p-value***
1. I am confident in my ability to contribute to a research study.	5.71 (1.20)	[3-7]	6.36 (0.74)	[5-7]		0.64	0.033
2. I am confident in my leadership abilities.	5.71 (0.83)	[5-7]	6.36 (74)	[5-7]		0.64	0.014
3. I am confident in my ability to understand health-related data.	5.86 (1.41)	[2-7]	6.07 (0.83)	[5-7]		0.21	0.583
4. I am confident in my ability to share health-related data with my community.	5.71 (1.59)	[2-7]	6.29 (0.91)	[4-7]		0.57	0.218
5. I am confident in my ability to work with my community to prioritize health issues based on data.	5.64 (1.34)	[2-7]	6.36 (1.01)	[4-7]		0.71	0.027
6. I am confident in my ability to collect data.	5.86 (0.86)	[4-7]	5.86 (1.10)	[4-7]		0.00	1.000
7. I am confident in my ability to engage with research investigators.	5.29 (1.38)	[2-7]	6.50 (0.76)	[5-7]		1.21	0.001
Average:	**5.68**	**[2-7]**	**6.26**	[4-7]		**0.58**	

*paired t-test for difference of means with significance set at .05

TABLE 10	Change in Scores on Knowledge Items (N=14)						
Knowledge Items	**T1 Pre-training Average (SD)**	**Range**	**T3 Post-PROGRAM Average (SD)**	**Range**		**Change in mean**	**p-value***
8. I am knowledgeable about social determinants of health.	5.50 (1.29)	[3-7]	6.57 (0.51)	[6-7]		1.07	0.006
9. I am knowledgeable about health disparities in New Haven.	5.57 (0.94)	[4-7]	6.50 (0.76)	[5-7]		0.93	0.002
10. I am knowledgeable about the process of conducting a research study.	4.86 (1.56)	[2-7]	6.36 (0.93)	[4-7]		1.5	0.008

11. I am knowledgeable about various data collection tools including surveys, observations, and focus groups.	5.43 (1.28)	[3-7]		6.14 (0.66)	[5-7]		.71	0.045
12. I am knowledgeable about the difference between qualitative and quantitative data.	5.50 (1.34)	[3-7]		6.57 (0.65)	[5-7]		1.07	0.006
13. I am knowledgeable about different ways New Haven residents can be involved in research studies.	4.64 (1.69)	[1-7]		6.29 (0.91)	[5-7]		1.64	0.007
14. I am knowledgeable about Community-Based Participatory Research (CBPR).	4.50 (1.83)	[1-7]		6.71 (0.83)	[4-7]		2.21	0.002
15. I am knowledgeable about Patient-Centered Outcomes Research (PCOR).	4.00 (1.84)	[1-7]		6.29 (0.83)	[4-7]		2.29	0.002
Average:	**5.00**	**[1-7]**		**6.43**	**[4-7]**		**1.43**	

*paired t-test for difference of means with significance set at .05

INVESTIGATOR FEEDBACK

Table 11. Investigator Survey Responses				
		mean	*range*	**Percent reporting "very" or "extremely"**
1.	How beneficial was the involvement of Health Leaders for your research? (n=16)	3.1	1.0-5.0	50%
2.	How engaged were the Health Leaders in their assigned projects related to your research? (n=16)	3.8	1.0-5.0	69%
3.	How prepared were you to engage a Health Leader into your work when the Health Leader started? (n=15)	3.0	2.0-5.0	33%
4.	While working with New Haven Health Leaders, how supported by the CARE team did you feel? (n=16)	3.6	1.0-5.0	63%
5.	How likely are you to involve a Health Leader in a research project in the future? (n=15)	3.9	2.0-5.0	60%
6.	How likely are you to recommend the New Haven Health Leaders program to a colleague who is seeking to engage community members in their research? (n= 16)	3.9	2.0-5.0	69%

*Scale: *1- not at all, 2- somewhat, 3- moderately, 4- very, 5- extremely*