



Partnerships for Environmental Public Health Evaluation Metrics Manual

Chapter 2: Partnerships

Chapter Contents

Introduction	14
Activities	16
Outputs	29
Impacts	36
Case Study	42
Summary of Metrics	44

Chapter 2: Partnerships

Introduction

This chapter focuses on the PEPH program area of partnerships. As discussed in Chapter 1, we use a logic model approach to illustrate the program components and to guide readers through the identification of potential metrics that can be used to document achievements related to partnerships. This information should serve as a source of ideas and examples for grantees, not as a prescriptive approach for building partnerships.

We provide examples throughout the chapter to show how grantees have applied the metrics in PEPH projects. We encourage readers to think of other metrics or to adapt these metrics to fit their project or partnership.



Characteristics of successful partnerships:

- Trust, openness, and mutual concern.
- Patience, flexibility, and adaptability.
- Understanding and respect for the mission of each partner agency.
- Recognition of and respect for what each partner does well.
- Respect for each partner's need for autonomy.
- Willingness to share resources for the benefit of all.
- Willingness to make decisions about adding or removing.

Partnerships Logic Model

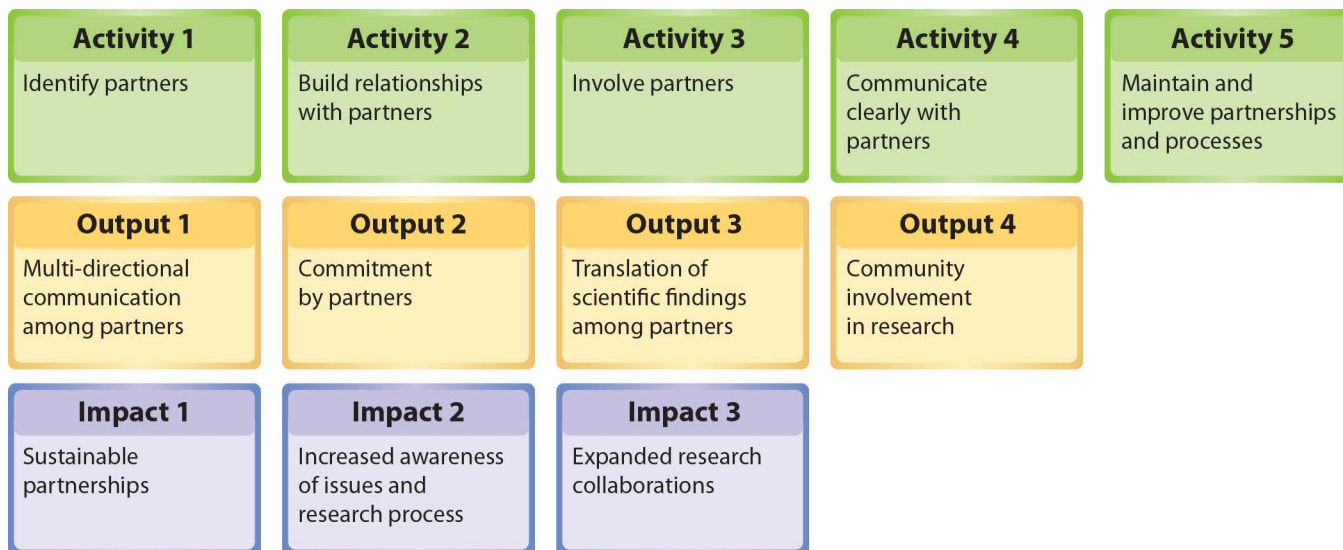
Through our review of PEPH programs and relevant research on partnerships, we have identified activities, outputs, and impacts that are common among PEPH programs. Figure 2.1 illustrates a variety of activities, outputs, and impacts that might be associated with the creation and maintenance of partnerships within PEPH programs. This model is not comprehensive. Many other activities, outputs, and impacts are possible, but not shown.

This model contains three major components:

- **Activities** are actions that are based on available inputs to create and maintain partnerships.
- **Outputs** are the direct products of partnership activities.
- **Impacts** are benefits or changes resulting from the activities and outputs.

In general, the logic models used in this Manual show an increasing level of maturity from left to right and from top to bottom. This design should ensure that all grantees, regardless of experience or capacity, can find activities, outputs, or impacts relevant to their program. Grantees should also keep in mind that the actual implementation of a project may be more iterative than is shown in these logic models. For example, impacts achieved early in a project may affect the implementation of activities that occur later in the project. The elements of the model are numbered in Figure 2.1 to provide reference for discussion of this chapter.

Figure 2.1 Partnership Logic Model



Selecting Data and Metrics

In Chapter 1, we discussed potential sources of data. Grantees may find the following records to be helpful sources of data in tracking achievements related to partnership building:

- Activity logs
- Contact logs
- Participant lists
- Feedback forms
- Publication and material development lists
- Meeting agendas
- Group discussions
- Surveys
- Interviews
- Meeting notes
- Internet web logs
- Email exchanges
- Telephone logs
- Budgets



For a more comprehensive list of data sources, see **Chapter 7: Principles of Evaluation**.

Records describe what happened and how. Records often take the form of an activity log or a journal that catalogues decisions, event attendees, and other critical information.

When selecting metrics, remember that it will be easier to measure activities and outputs. Documenting impacts is important, but it may be challenging because of the length of time it might take to achieve the impacts, as well as the contextual factors that are likely to influence your ability to achieve these impacts.

The rest of this chapter provides ideas about activities, outputs, and impacts related to partnerships, as well as potential metrics to measure them.



Consider whether you can collect data for your metrics in a realistic time frame.



Although we have numbered the components in the logic model to facilitate the discussion in this chapter, it is important to remember that the logic model is not linear. Projects will conduct activities, produce outputs, and work to achieve impacts that are appropriate to their communities.

Activities

In this section, we discuss five activities that PEPH grantees may conduct in their efforts to build partnerships. Activities are actions that use available inputs to create and maintain partnerships.

- Activity 1: Identify partners
- Activity 2: Build relationships with partners
- Activity 3: Involve partners
- Activity 4: Communicate clearly with partners
- Activity 5: Maintain and improve partnerships and processes

Activity 1: Identify partners



Whether forming a new partnership or adding members to an existing partnership, a key step is to identify potential partner organizations and connect with leaders of the organization. For example, public health officials are often the first point of contact for community members with an environmental health concern.

Grantees may want to select partners who can play key roles in activities such as monitoring and surveillance, gathering input from the community, and sharing information among partner organizations. Individuals who serve as an initial point of contact within organizations can also become a source of additional contacts from other organizations.



Potential Partners:

- Public Health Officials
- Educators
- Community Organizers
- Faith-Based Organizations
- Tribes
- Federal and State Agencies
- Media Representatives

Some activities and approaches for identifying partners:

- Consider the need for a partner and the qualities and characteristics desired in such a partner.
- Identify groups, individuals, or institutions for a partnership that have a stake or role in the issue at hand.
- Address any historical or significant trust issues before creating a new partnership. Identify program goals and values of the partner organizations.
- Identify areas of duplication and potential gaps.
- Assess compatibility with potential partners.
- Analyze what your program and the potential partners can gain through this partnership.
- Identify specific resources that these potential partners will contribute to the outcomes or products expected from the partnership and compare them with available resources.
- Conduct an initial survey to identify partners of interest, including nontraditional partners that might be helpful in a new partnership.
- Assess previous and existing partnership experiences.

Example Metrics for Activity 1: Identify partners

- Number of partners identified.
- Number of additional identified partners that could be added in the future.
- Number of contacts made with potential partners.
- Number of potential partners who express interest in the project.
- Number and description of needs of each partner.
- Number and description of resources that each partner can contribute.
- Description of benefits each partner may receive.
- Description of project goals as related to partnerships.
- Description of potential or perceived benefits of the partnership to each partner (e.g., increased visibility, increased access to priority populations, increased networking opportunities, technical assistance, connections to key partners, funding, improved image).
- Description of historical trust concerns between partners and how these concerns will be addressed.

Metrics in Action 2.1: Researchers at the **University of Cincinnati (UC)** sought to better understand the effect of anti-idling policies on the health of school children. UC researchers had talked with potential partners at Cincinnati Public Schools (CPS) and the Cincinnati Health Department (CHD) to explore opportunities to work together and to begin to lay the foundation for a strong partnership by understanding the resources each partner might bring to a project. When a funding opportunity arose, the partners were able to mobilize quickly and apply for an NIEHS grant that enabled them to address childhood asthma. The partners are now working on a project to gather more data about the health risks associated with school-bus idling and to develop strategies to reduce school children’s exposure to air pollution.

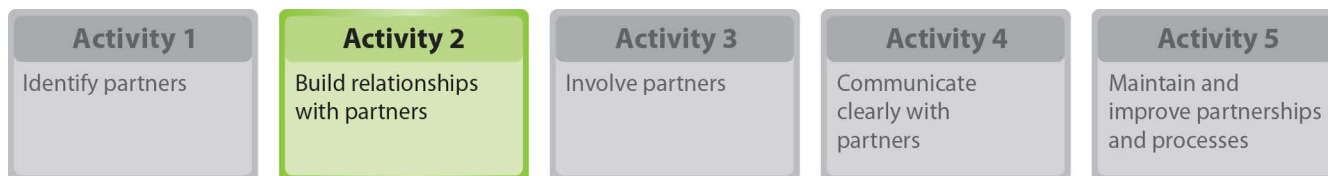
The efforts of local, state, and national organizations have been crucial to the success of the project. For example, UC, CPS, and CHD staff and school nurses helped identify and recruit students with asthma and also conducted health assessments of these students. UC staff helped prepare materials for the project, including handouts, assessment tools, and poster boards to be used for community-wide outreach events. UC and CPS staff and students worked together with assistance from the Alliance for Leadership and Interconnection (ALI) to create an Anti-Idling Campaign training video. The video features students providing facts about the problems created by engine idling and highlighting ways to help improve air quality while protecting the environment in a cost-conscious manner. A CPS student also composed an anti-idling-themed song, fulfilling the need for an engaging and age-appropriate outreach method to be used in the schools.

Other partners included Roxanne Qualls, a veteran Cincinnati city councilwoman, who developed a public service announcement endorsing the anti-idling campaign and challenging viewers to action. The CHD also educated and trained more than 600 bus drivers to support to the anti-idling campaign. Finally, the Hamilton County Department of Environmental Services provided information on air quality to staff and students of the CPS during school assemblies.

Metrics for identifying partners:

- Number of partners identified: *At least five organizations participated in this project, including CPS, CHD, ALI, Councilwoman Qualls, and the Hamilton County Department of Environmental Services.*
- Number and description of resources that each partner can contribute: *CPS provides access to students and schools in the district, CHD provides nursing services, Councilwoman Qualls provided credibility and the ability to attract attention to the project, and the Hamilton County Department of Environmental Services provided training and information to CPS staff and students.*

Activity 2: Build relationships with partners



Facilitating open and organized communication among partners in a way that builds confidence and trust is often the best starting point for a project and a necessary constant throughout. Examples of activities that may help enhance communication to build relationships with partners include:

- Actively involving partners through participation on an advisory board, science advisory board, and/or policy advisory board.
- Clarifying expectations through a formal agreement¹¹ that might include:
 - Names of partner agencies, organizations, and individuals.
 - Statement of purpose.
 - Participation requirements.
 - Opportunities or plans for exiting the partnership.
 - Expectations for meeting frequency, duration, etc.
 - Expectations or goals for the project as a whole and for each partner.
 - Description of allocation of resources.
 - Approach to addressing cultural competency.
 - Data sharing and ownership agreements.
 - Publication and authorship guidelines.
 - Signatures of agencies and organizations committed to accomplishing the goals.



Many PEPH partnerships spend time identifying a process for reaching a consensus and for resolving conflict. Professional facilitators can be helpful in important decision-making meetings. It is important that partners not ignore contentious issues, but address them directly to encourage effective decisions and strong partnerships.¹²



Many frameworks exist that describe key concepts related to partnering. Grantees may find it useful to create checklists or metrics based on these frameworks. We provide a list of sources in [Appendix 4](#).

¹¹ A sample memorandum of understanding (MOU) is included in Appendix 8 as an example of a formal agreement.

- Using formal governance procedures to organize partnership activities.
- Revisiting mission, goals, and formal agreements regularly (e.g., bimonthly, annually, biannually).
- Providing opportunities for regular communication among partners through emails, listservs, and participation in meetings.
- Providing opportunities for input on and access to meeting agendas.
- Providing incentives (financial and non-financial) to encourage partners to fully participate in the program or project.
- Planning meetings and other activities to increase interaction, communication, and exposure to one another, as well as to build collaboration and cooperation (e.g., community meetings, classes, workshops). Ensure that meetings are scheduled at times that are convenient to all partners.
- Addressing cultural differences by working to understand the culture, values, and beliefs of new partners and by developing ways to address differences in education, language, preparation, culture, etc.
- Vocalizing and discussing expectations from each partner in a group setting until an agreement is reached and engaging professional facilitators to manage conflict when needed.
- Interviewing partners to assess which aspects of the partnership work or do not work.

Example Metrics for Activity 2: Build relationships with partners

- Description of formal partnership agreement, including provisions and requirements.
- Number of partners who signed agreement.
- Re-evaluation of goals and mission.
- Description of how barriers to communication (e.g., cultural, language, educational) between partners were addressed.
- Description of how aspects of the relationship have changed over time.
- Lists of outreach and collaboration partnership activities, including number of partners involved, date, time and place of activity, who identified the issue, and approach and purpose of activity.
- Satisfaction level of grantees with partnership (quantitative or descriptive).
- List of partners and advisory board members.

¹² See also, Susskind L, McKernan S, Thomas-Larmer J. 1999. *The Consensus Building Handbook: A Comprehensive Guide to Reaching Agreement*. Thousand Oaks, CA: Sage Publications, Inc.

Metrics in Action 2.2 Alaska Community Action on Toxics: Because of Alaska's vast geography and severe weather, organizations there face unique challenges in building partnerships. These challenges require that organizations find creative ways to communicate and facilitate participation in research projects and other activities. The Alaska Community Action on Toxics (ACAT) has addressed these challenges to partnership building by establishing a volunteer board that meets using teleconference technology to supplement face-to-face meetings. The board comprises representatives from across the state: three members from Anchorage and five members from communities throughout Alaska. During the meetings, board members discuss challenges, resolve conflicts, and work together to develop ACAT strategy. Board members keep the community partners involved by regularly reporting back to the communities. Twice a year, ACAT also holds community meetings to discuss project progress and research findings, as well as to consider new ideas for research.

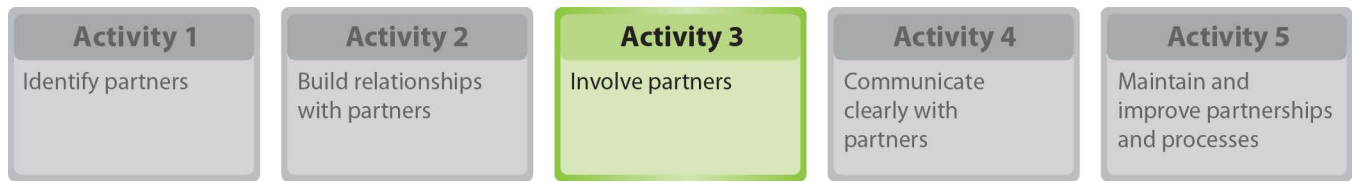
Metrics for building relationships with partners:

- Number of partners who signed formal partnership agreement: *X* partners signed a formal partnership agreement and regularly participate in board activities.*
- Satisfaction level of grantees with partnership: *According to a survey of ACAT board members, XX% are very satisfied with the use of teleconferences as a way to conduct board meetings.*

For more information about ACAT, visit: <https://www.akaction.org>. [accessed 19 January 2021]

**Where actual metrics were not available we have used an X to indicate hypothetical numbers.*

Activity 3: Involve partners



Engaging partners allows them to develop a sense of project ownership, rather than a feeling of being the object of the study. Community partners in particular are more likely to commit to and participate in projects if they have a voice in framing the research questions and conducting the research. Recognizing inherent challenges to engaging community groups in this fashion, PEPH grantees frequently provide training to community members on the research process.



Partners can be involved with almost every aspect of research projects, including:

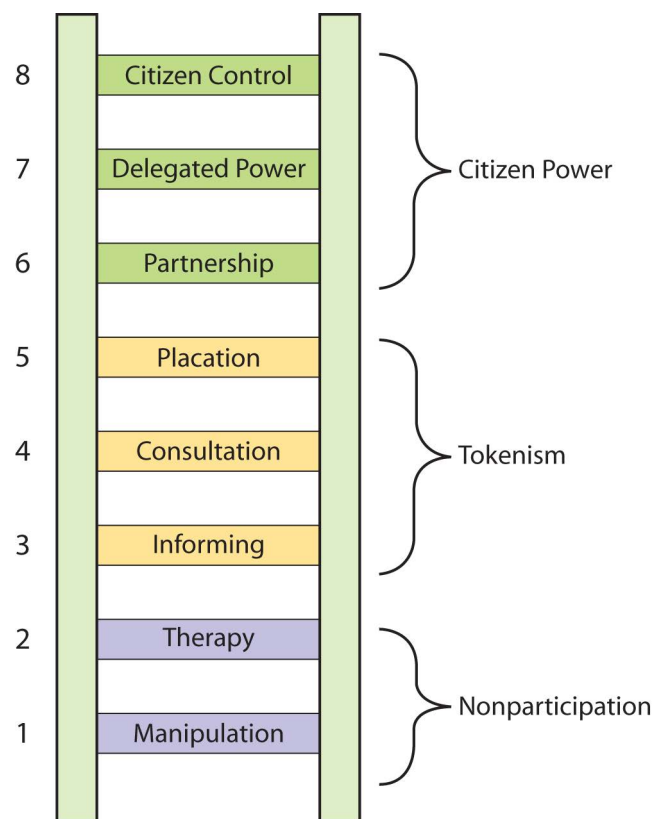
- Framing research questions.
- Designing the research projects.
- Collecting and analyzing data.
- Interpreting and translating findings.
- Communicating findings to others.
- Evaluating what worked and designing next steps.

Involving partners in the research process may help to:

- Familiarize partners with research language to ensure successful communication.
- Familiarize researchers with language used by the community.
- Enable partners to advocate for their communities.

For another perspective on active partner involvement, consider about Sherry Arnstein's ladder of citizen participation, in which she describes the various levels at which partners may be involved with a project.¹³ Figure 2.2 illustrates Arnstein's levels of involvement using the rungs of a ladder and shows how community empowerment begins to happen when community members and other partners are actively engaged in a partnership.

Figure 2.2 Arnstein's Ladder of Citizen Participation



¹³ Arnstein, SR. 1969. A ladder of citizen participation. *J Am Planners* 35(4):216-224.

Using the Ladder of Participation in a Project

In 2003, the **University of Kentucky** formed the **Kentucky Research Consortium for Energy and Environment (KRCEE)**. The Consortium's mission is to provide technical support to the U.S. Department of Energy, the U.S. Environmental Protection Agency, and the Kentucky Division of Waste Management for cleanup efforts at the Paducah Gaseous Diffusion Plant (PGDP), a National Priority List Superfund site. In 2009, the Department of Energy asked KRCEE to develop a community-based future vision for the site and create a PGDP End State Report that identifies the range of community perspectives and preferences for the site's future after the Department of Energy closes the facility. The project team utilized the Community-Based Participatory Communication process. To assess the level of public participation in previous efforts to engage the community, as well as the perceived ideal levels of public involvement, KRCEE used Sherry Arnstein's "Ladder of Citizen Participation." Respondents assessed the performance of the Consortium using the rungs of the ladder as the rating scale.

Paducah participants felt that the target level of public engagement as depicted on the Arnstein Ladder was *partnership*, but they felt that the actual experienced level of public engagement lay between *informing* and *placation*. KRCEE developed an evaluation tool based on these partnership levels and used the findings to move the group toward the desired level of involvement. To use the scale as a metric, projects could track the changes in responses in each category over time.

Example Metrics for Activity 3: Involve partners

- Number and description of partners who contributed to identifying or framing research questions.
- Description of partners' contributions to research.
- Number and description of concerns voiced by partners.
- Description of how concerns were addressed by partnership.
- Description of how resources were shared among partners.
- Number of hours partners participated in research.
- Description of partner involvement in research.
- Satisfaction level of grantees with involvement in research process (quantitative or narrative).
- Number and description of interactions with partners.
- Number of partners in research project leadership roles.

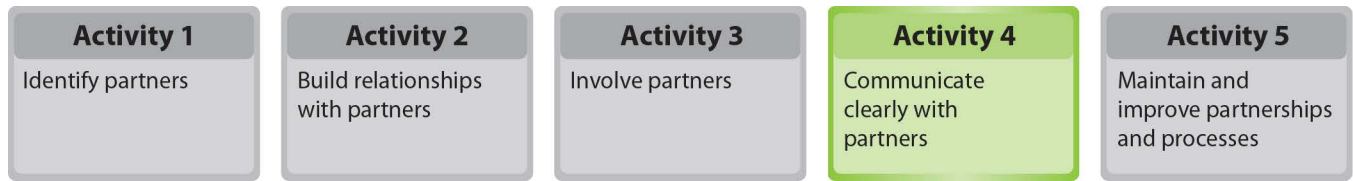
Metrics in Action 2.3 Marine Resources for Future Generations (MRFFG): The Washington Department of Fish and Wildlife (WDFW) wanted to work with the Asian and Pacific Islander (API) community members to address illegal shellfish harvesting issues. They identified the Korean Women’s Association (KWA) and the Indochinese Cultural and Service Center (ICSC) as two partners who also had an interest in promoting environmental public health issues among the API community. These partners have a history of working in the API community and helped WDFW gain access to API community members. The partners worked with the community to educate them about the hazards of consuming shellfish from closed and contaminated beaches. Once the community understood the dangers associated with contaminated seafood, they realized they did not have the information they needed to make changes in their own behavior. The local markets where API communities buy shellfish did not advertise the source of the shellfish. To address this problem, the partners created the MRFFG program, which worked with local markets to identify and display the source of shellfish. The MRFFG program successfully involved relevant partners in the process of framing and prioritizing the project’s research questions to address local concerns and help reduce local health risks.

Metrics for involving partners:

- Number and description of partners who contributed to identifying or framing research questions: *Three partners worked to identify and frame research questions: a state agency and two community service organizations with ties to the API community.*
- Number of hours partners participated in research:
Washington Department of Fish and Wildlife, XX hours
The Korean Women’s Association, XX hours
Indochinese Cultural and Service Center, XX hours

For more information about this project, see: Judd NL, Drew CH, Acharya C, Mitchell TA, Donatuto JL, Burns GW, et al. 2005. Framing scientific analyses for risk management of environmental hazards by communities: Case studies with seafood safety issues, *Environ Health Perspect* 113(11).

Activity 4: Communicate clearly with partners



Strong partnerships are the result of effective communication among partners. Partners are more likely to engage in environmental public health activities if they understand the purpose, expectations, and benefits of participation. Strategies for communicating clearly and effectively with partners include:

- Providing opportunities for regular communication through email, listservs, meetings, etc.
- Creating messages and materials in partnership with the target audience.
- Developing culturally-appropriate communication strategies and messages in partnership with the intended audience.
- Testing communication materials for readability.
- Creating opportunities to listen to community members.

Example Metrics for Activity 4: Communicate clearly with partners

- Number and description of messages disseminated.
- Number and description of media channels used to disseminate messages (radio, television, websites, brochures, live performances, etc.).
- Description of efforts to ensure bidirectional communication.
- Number of people who received messages (website hits, brochures taken, radio or television audience estimates, meeting participants).
- Level of awareness of messages.
- Level of comprehension of messages.
- Description of efforts to ensure culturally-appropriate messages.

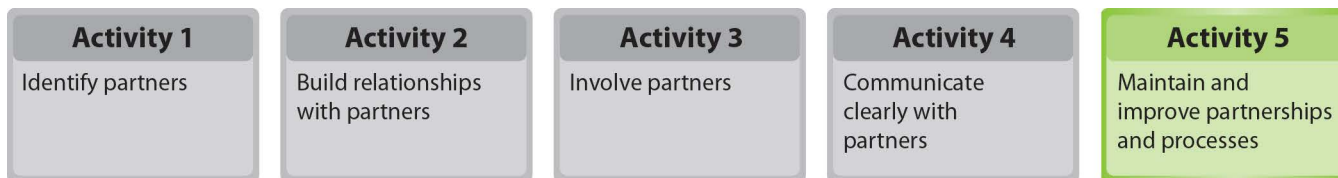
Metrics in Action 2.4 The Silent Spring Institute: The Institute has a core mission of identifying the links between the environment and women’s health, particularly breast cancer. The Institute collaborates with Communities for a Better Environment (an environmental justice organization) and researchers at Brown University and the University of California, Berkeley, to study household exposures to pollutants. One of the Institute’s primary strategies for communicating with its target audience is to report back to study participants on the chemicals detected in their home. The feedback is tailored to the unique exposures identified and includes actions that can be taken to reduce or eliminate these exposures. Reports put results in the context of what scientists know and what is still uncertain about links between these exposures and health. The Institute has found that households are motivated to adopt environmentally healthy practices when they receive tailored information about specific environmental exposures in their homes.

Metrics for communicating clearly with partners:

- Number and description of messages: *All messages to homeowners are personalized to provide specific actions that can be taken to mitigate environmental health hazards.*
- Number and description of media channels used to disseminate messages: *The Institute provides feedback in person to provide opportunities for questions and discussion.*

For more information about The Silent Spring Institute, visit: <https://silentspring.org>.
[accessed 19 January 2021]

Activity 5: Maintain and improve partnerships and processes



Once grantees have established partnerships they still need to work to maintain the relationships. Many of the strategies conducted to build partnerships in the first place are also applicable to maintaining and improving these relationships.

Specific strategies for sustaining partnerships include:

- Communicating on a regular basis.
- Revisiting and reframing the vision and goals of the project.
- Revisiting decisions made early in the project, including governance agreements, rules for meetings and verbal agreements about the importance of trust, communications, and respect for other members of the partnership.
- Revisiting and reframing research questions.
- Assessing the number and diversity of partner organizations.
- Assessing potential threats to the partnership.
- Adding partners or giving partners the opportunity to exit the partnership.
- Gathering additional input and opinions from partners.
- Summarizing outcomes of the partnership to communicate its value.



As a project progresses and new needs emerge, it might be useful to consider whether or not partners need to cycle in and out of active participation.¹⁴ In order to facilitate this process, it may be helpful to provide structured opportunities to renew partnership commitments.

Example Metrics for Activity 5: Maintain and improve partnerships and processes

- Number and description of partners added.
- Number and description of partners who cycle out of the partnership.
- Number and description of partners retained.
- Description of new needs.
- Description of new resources.
- Description of changes to research questions.

¹⁴ Trent TR, Davis RM. 2009. Scope, scale, and sustainability: What it takes to create lasting community change. *The Foundation Review* 1(1): 96-114.

Outputs

This section describes four outputs PEPH grantees may produce as a result of their activities to build partnerships. As a reminder, outputs are the direct products of partnership activities. Identifying and describing outputs enable grantees to see the connection between activities and impacts.

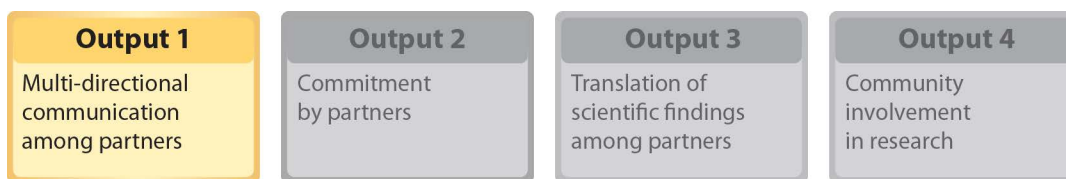
Output 1: Multi-directional communication among partners

Output 2: Commitment by partners

Output 3: Translation of scientific findings among partners

Output 4: Community involvement in research

Output 1: Multi-directional communication among partners



A direct output of building strong partnerships is the opportunity for multi-directional communication among partners, in which all partners listen as often as they talk. Partners involved in multi-directional communication have equal opportunities to take part in discussions, set the agenda and decide on research priorities. Partnerships that encourage multi-directional communication encourage transparency, sustain effective communication, and promote sustainable partnerships. To determine if a partnership is generating opportunities for multi-directional communication, grantees can answer the following questions:

- Who initiates the communication?
- Who designs the type of interaction or communication?
- Who decides on the language and content?
- Who is the target audience?

Example Metrics for Output 1: Multi-directional communication among partners

- Number and types of partners participating in communication activities (e.g., ethnic, cultural, and geographic diversity).
- Number and description of opportunities for partners to voice their opinions and needs.
- Description of contributions from partners.
- Description of exchanges that occur.
- Description of any adaptations made to communication styles or messages to reflect cultural appropriateness.

Metrics in Action 2.5 The Deep South Center for Environmental Justice (DSCEJ): Located in New Orleans, DSCEJ was founded in 1992 as a collaboration of regional community environmental groups and universities dedicated to addressing environmental justice issues. The DSCEJ has developed and embraced a model for community partnership called “communiversity,” which emphasizes a collaborative relationship between universities and communities.

Communiversity Model



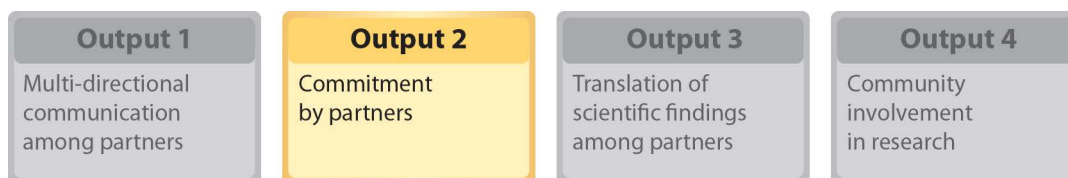
This “communiversity” approach was developed in direct response to past inequalities in communication, where problem-solving attempts often consisted of researchers controlling the dynamics of interaction. The new model helps equalize partner interactions and input and facilitates reciprocal communication between community members, researchers, and students. The DSCEJ community and university partnership provides opportunities for communities, scientific researchers, and policymakers to collaborate on programs and projects to minimize environmental health risks and consequences.

To advance the “communiversity” model, DSCEJ formed the Mississippi River Avatar Community Advisory Board (CAB), which provides a venue for multi-directional communication among representatives from grassroots organizations and leaders of affected communities in the river corridor. The results of these partnerships include environmental public health initiatives such as A Safe Way Back Home and toolkits for Hurricane Katrina survivors.

Metrics for multi-directional communication among partners:

- Number and description of opportunities for partners to voice their opinions and needs: *The Mississippi River Avatar Community Action Board meets X times per year. XX people attend the meetings and actively participate in discussions.*
- Number of times each partner contributes to meetings: *Each partner has helped lead at least X meetings and all partners have provided input at least once per meeting.*

Output 2: Commitment by partners



Increased commitment by partners to both the project mission and the partnership itself is an output of successful partnerships. Evidence of commitment serves as an indicator that relevant partners care about the project underway and are actively engaged in the partnership. This evidence could include tangible investments, such as contributions of money or meeting space. Evidence can also include less tangible elements, such as time donated, partner interactions, and outreach. For example, academic partners can demonstrate commitment to the project by training and employing members of the community:¹⁵

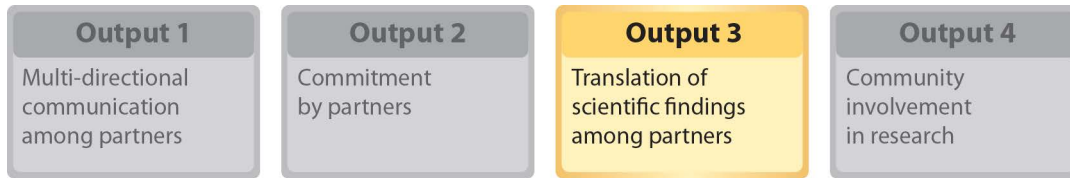
- In New Orleans, the “Lead Busters” project trained and employed community residents to conduct interventions.
- In Detroit, residents partnered with researchers, as leaders and active participants, to conduct asthma interventions in the community for the Community Action Against Asthma project.

Example Metrics for Output 2: Commitment by partners

- Number of active diverse partners who represent research and community needs (e.g., funders, faith-based organizations, governmental and nongovernmental organizations, universities, etc.).
- Number of community partners participating in a grant application process.
- Description of resource sharing among partners.
- Level of funding committed by partners.
- Description and count of other resources committed by partners (staff, volunteers, supplies, meeting space).
- Number of community partners participating in the research effort.
- Description of community support (e.g., letters of support, invitations to organizational events, funding contributions).
- Description of partner feedback.
- Number of partners signing memorandums of understanding or other commitment documents.
- Number of community partners willing to take on leadership roles (or number in leadership roles).
- Number of hours volunteers contributed.

¹⁵ Jones L. 2000. Healthy African American Families. In: Successful Models of Community-Based Participatory Research, 29-31 March 2000: Final Report, Washington, DC. 38. (O’Fallon LR, Tyson FL, Dearry A, eds). Available: https://www.hud.gov/sites/documents/DOC_12485.PDF [accessed 19 January 2021] [accessed 16 December 2011].

Output 3: Translation of scientific findings among partners



Research produces scientific findings about community based environmental health interventions, activities, or products. By interpreting or translating these findings for specific audiences, researchers and community partners can work together to apply the science in ways that affect the daily lives of community members. When research information is appropriately translated and discussed, partners are more likely to adopt measures that are recommended for reducing environmental health risks.

Example Metrics for Output 3: Translation of scientific findings among partners

- Number and description of materials that translate findings (see also Chapter 4: Products and Dissemination).
- Lists of co-authorship on materials that demonstrate a mix of partners.
- Description of subsequent funding for translation efforts.
- Description of support provided by target audience for translation efforts.
- Number of publications that report on translation activities.
- Description and counts of how partners are using findings in other settings.
- Number of requests for translated information by partners.
- Description of requests for materials by others.
- Anecdotal evidence indicating successful translation of scientific findings to new audiences.
- Number and description of materials or products produced by partners that include research findings.

Metrics in Action 2.6: The goal of the **Superfund Research Translation Core (Core)** at the **University of California (UC)**, Berkeley, is to translate research findings and scientific knowledge for a wide range of audiences. The audiences include federal and state agencies, state legislators and their aides, non-governmental organizations (NGOs), community-based organizations (CBOs), relevant business interests, and others involved in the remediation of Superfund sites or engaged in efforts to protect public health. The Core involves community groups in workshops to explore the relationship between research findings and policy in order to identify translation projects that will address community concerns. For these workshops, the Core works with partners to identify and select topics, formulate agendas, and select speakers. Engaging the communities in the selection of topics for translation results in a richer product and a more inclusive roster of participants, reflecting both science and policy expertise. Previous workshop topics include:

- Use of biomonitoring data in environmental public health surveillance and policy.
- Implications of research related to susceptibility to environmental exposures.
- Use of findings in public policy.

Following the selection of topics, researchers work with community partners to translate scientific findings in ways that allow conceptual access to the research. UC Berkeley also ensures that the final materials are available in locations frequented by the target population.

Metrics for translation of scientific findings among partners:

- Description of support provided by target audience for translation efforts: *UC Berkeley involves the community partners by educating them about the research findings and gathering ideas from them about how this information could be applied in their communities. Community partners provide input on early messages and products, and provide feedback on drafts of initial materials. Community partners also provide guidance about the most effective ways to distribute the material.*
- Description of requests for materials by others: *X organizations requested XX copies of the (name of publication), (name of newspaper) ran an article on the issue, and (name of organization) has requested XX copies to distribute to (whom?)*

For more information about the UC Berkeley Core, visit: <https://superfund.berkeley.edu>.
[accessed 19 January 2021]



For more information on products and dissemination, see **Chapter 4**.

Output 4: Community involvement in research



PEPH programs include teams of researchers and community members who work together to develop research questions, conduct the research, translate research findings, and produce products for dissemination. This type of community involvement in research is a direct product of a successful partnership.

Example Metrics for Output 4: Community involvement in research

- Number of partners who participate in collecting data.
- Number of partners who participate in analyzing data.
- Number of partners who participate in developing messages to summarize results.
- Description of community involvement in research process.
- Number of partners who co-author papers.
- Number of new organizations who become involved in research and outreach.
- Number of partners who provide input to websites.
- Number of engaged students from communities.
- Number of theses, posters, doctoral dissertations, etc., related to the research.
- Description of feedback from the target community that demonstrates effective communication strategies tailored to partner audiences, including consideration of language and cultural differences.
- Number and description of partners participating in seminars on campus and in the community, including number of contact hours.
- Frequency of invitations for partners to attend events of other partners.

Metrics in Action 2.7: The partners of the community-based, participatory research project called **Together for Agricultural Safety Project (TASP)** worked as a team to develop interventions to reduce the adverse health effects of pesticide exposure among farmworkers. The collaborators included health researchers from the University of Florida (UF), the Farmworker Association of Florida (FWAF) and Best Start, Inc. (BSI), a social marketing research firm. The team first conducted focus groups with farmworkers to assess their knowledge, attitudes, and behaviors about workplace pesticide exposure, as well as to understand how best to communicate these environmental public health messages to them. The project employed bilingual FWAF community members to recruit group participants and moderate information sessions. Researchers also developed and conducted a survey with 382 workers to determine the best ways to reduce harmful pesticide exposure. Based on the input of the farmworkers, the partners designed and built portable hand-washing tanks for the field, and developed an accompanying educational campaign about the importance of field sanitation practices for workplace supervisors and employees. All three partners also contributed to an article summarizing the process by which the project was implemented.

Metrics for community involvement in research:

- Number of partners who participated in collecting data: *Members of the FWAF helped develop and lead focus groups and provided input into the survey development. Researchers from UF and BSI also collected data, while 382 farmworkers provided data.*
- Number of partners who co-author papers: *All three partners contributed to an article summarizing the process by which the project was implemented.*

For more information about TASP, visit:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1240566/pdf/ehp109s-000461.pdf>.

[accessed 19 January 2021]

Impacts

Impacts are benefits or changes resulting from activities and outputs. This section provides metrics for three impacts that grantees might expect to achieve as a result of building and maintaining partnerships.

Impact 1: Sustainable partnerships

Impact 2: Increased awareness of issues and research process

Impact 3: Expanded research collaborations

Impacts are more difficult to measure than activities and outputs, in part, because it often takes several years for substantive changes to occur. When thinking about the impacts a project might be able to achieve and how to measure those impacts, it can be helpful to think in terms of short-term and long-term impacts. Short-term impacts are typically those changes that would be expected in the first few years of a project. Long-term impacts might not be seen for 5 or more years. Even when impacts are expected to occur beyond the life of a program, it can be helpful to identify impacts that grantees can document and measure.

Grantees may also be hesitant to claim credit for impacts because other organizations or other contextual factors may have contributed to the changes. While grantees may not be able to claim sole credit for these impacts, it is important to be able to track these broader changes and to document the contributions made by the project to achieving these impacts.

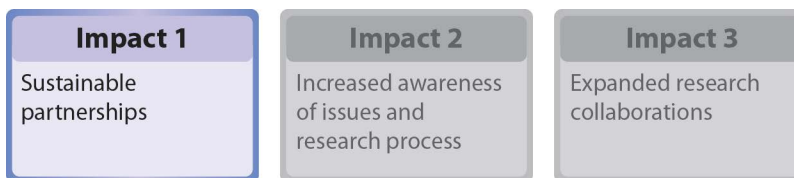
Although there are challenges associated with measuring impacts, tracking progress toward these goals helps grantees stay on track, demonstrate success, and identify areas for improvement. What is most important is that the ultimate goal of partnerships is to produce outcomes and impacts that lead to improvements in health through a reduction in environmental health hazards.¹⁶



For additional information on long-term impacts, see **Chapter 7: Principles of Evaluation.**

¹⁶ See also, Silka L. 2000. Evaluation as a strategy for documenting the strengths of community-based participatory research in: Successful Models of Community-Based Participatory Research, 29-31 March 2000: Final Report, Washington, DC. 49-54. (O'Fallon LR, Tyson FL, Dearth A, eds). Available: https://www.hud.gov/sites/documents/DOC_12485.PDF [accessed 19 January 2021].

Impact 1: Sustainable partnerships



A sustainable partnership is able to maintain long-term success after dedicated funding sources have ended.¹⁷ Key factors necessary for sustainability include institutionalization (partnerships embedded in formal structures or relationships), financing, and capacity.¹⁸ A significant impact of PEPH projects is the existence of sustainable partnerships. Sustainable partnerships increase the amount and extent of community engagement in research. Such partnerships are especially beneficial to communities affected by a disproportionate burden of environmental health risk.



For additional information on leveraging, see [Chapter 3](#), and for more information on capacity building, see [Chapter 6](#).

Example Metrics for Impact 1: Sustainable partnerships

- Number of years the project or program has existed.
- Length of time partners remain involved with the partnership.
- Degree to which partners' organizations reflect a concern for environmental public health.
- Timeline of key milestones in partnership's history.
- Description of mutual influence.
- Description of long-term plans and benefits to each partner.
- Description of strategies for sharing power among partners.
- Description of challenges identified by partners and how they are addressed.
- Description of the body of knowledge acquired while developing and sustaining new and existing partnerships.
- Number of organizations that have formal policies requiring participation in the partnership.
- Description of continued relevance of the project to partners.

¹⁷ Center for Substance Abuse Treatment. 2008. Sustaining Grassroots Community-Based Programs: A Toolkit for Community- and Faith-Based Service Providers. HHS Publication No. (SMA) 08-4340. Rockville, MD: Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

¹⁸ Trent TR, Davis RM. 2009. Scope, scale, and sustainability: What it takes to create lasting community change. *The Foundation Review* 1(1): 96-114.

Impact 2: Increased awareness of issues and research process



Increased awareness of environmental health issues is another important impact of partnership activities. Engagement of community partners in identifying research questions, participating in the research and disseminating the findings provides the underpinnings for a community to fully understand environmental health issues and make informed decisions that affect them. By working together, community partners are able to improve awareness and understanding among their constituents of environmental public health issues and their sources, as well as the research process. Community input also helps improve the research and findings. Grantees can use community input to ensure that research questions address community concerns. Grantees can also use community input to ensure that materials and publications are relevant to the community and therefore more likely to be read and applied within the community.

Example Metrics for Impact 2: Increased awareness of issues and research process

- Trends in depth of understanding of community partners on environmental public health issues.
- Number of community partners who report increased awareness of environmental public health issues.
- Description of research findings reported in partners' materials, websites, and messages.
- Description of community mobilization around other environmental public health issues.
- Description of research findings reported in materials intended to change behaviors, policies, or regulations.
- Description of how public health departments changed materials based on research findings.
- Description of how schools have changed materials or curricula based on research findings.
- Number and description of new programs that have been added to address research findings.
- Number and description of new dissemination materials that have been added to address research findings.
- Description of how partners have applied knowledge of the research process to other issues.

Metrics in Action 2.8: The University of New Mexico Community Outreach and Engagement Program (UNM COEP) has invested the time to successfully communicate and engage with partners in order to increase awareness of environmental public health issues and the research process. The program communicates, with several tribal populations, about water quality, air quality, and social/environmental justice issues through multimedia tools developed with communities, such as photos and pamphlets, that individuals can take home and share with their families. They also use radio to broadcast messages, ranging from 30-second public service announcements to one-hour talk shows. The researchers produce almost all of their materials in English and native languages where appropriate.

Although initial efforts may have had a narrow focus, such as raising awareness of drinking water quality, the researchers found that after several years of working with the tribes, the community members who participate in the meetings or call-in shows tend to ask questions about a broad range of environmental public health issues. Through this partnership, the researchers have developed a better understanding of the relationship of these communities to water and landbased resources, as well as of the way in which cultural priorities affect actions.

Metrics for increased awareness of issues and research process:

- Trends in depth of understanding of community partners on environmental public health issues: *The UNM COEP surveys community partners and analyzes the content of questions raised at meetings and in radio call-in shows to track the depth of understanding of focused issues and awareness of other potential environmental hazards over time. The number of questions based on inaccurate assumptions has decreased over the last 10 years, while the level of detail and number of issues have increased over the same time period.*
- Description of how partners have applied knowledge of the research process to other issues: *Communities have used the knowledge they gained about the research process to begin working with other agencies to address environmental health issues related to food safety and access, and to seat belt use as well. The program also tracks the number of times community and agency partners independently use research data to support requests for action and policy change.*

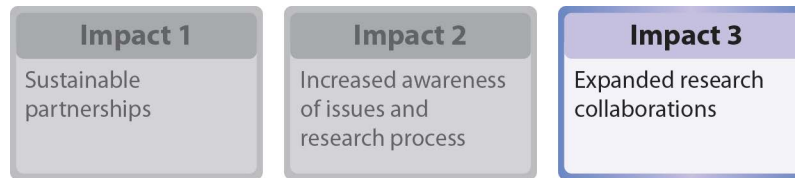
For more information about the UNM COEP, visit:

<https://hsc.unm.edu/pharmacy/research/areas/healthy-voices.html> [accessed 19 January 2021]



Example of posters used to raise awareness of water quality issues with Navajo populations.

Impact 3: Expanded research collaborations



As partnerships mature, one important impact that may result is collaboration on new projects. As partners get comfortable with the research process and learn to trust each other, it is likely that they will be interested in pursuing additional research collaborations. Follow-on projects can be more complex and sophisticated, include multiple components, and be more likely to leverage funds from internal and external partners.



See **Chapter 3** for more information on leveraging.

Example Metrics for Impact 3: Expanded research collaborations

- Number and description of partners who express an interest in additional research projects.
- Number and description of new research questions proposed by partners.
- Number and description of follow-on research projects identified.
- Number of early-stage investigators recruited to pursue environmental health careers.
- Number of application and awards for additional grants.
- Number and description of new partners who join the research project.
- Change in number of partners over the life of the project.
- Number of publications with new partners.
- Number of new partners who contributed to publications.
- Description of additional research opportunities generated.

Metrics in Action 2.9: The Detroit Community-Academic Urban Research Center (Detroit URC)

is a collaborative partnership whose members include the University of Michigan Schools of Public Health, Nursing, and Social Work, the Detroit Department of Health and Wellness Promotion, eight community-based organizations, and the Henry Ford Health System. The partnership was founded in 1985, and over the years has developed a strong sense of trust and open lines of communication among partners. When an opportunity to apply for NIEHS/EPA Centers for Excellence in Children's Health funding plan arose, the Detroit URC was able to mobilize its partners to take action. The partners openly discussed research priorities and concerns and identified children's environmental health as one of its priorities. Because of the strong partnership that was already in existence, the Detroit URC was able to expand its research into new priority areas and was able to successfully obtain funding to cover this new research area. The Detroit URC also recruited three additional agencies to participate in these new research projects.

Metrics for expanded research collaborations:

- Description of additional research opportunities generated: *\$5 million granted by NIEHS for establishing a Children's Environmental Health Sciences Center (Michigan Center for the Environment and Children's Health), 1998-2005; \$2.4 million granted by NIEHS to conduct the Community Organizing Network for Environmental Health, 2000-05; \$2.5 million granted by NIEHS for a household intervention to reduce asthma triggers, 2008-13; and another \$2.5 million from NIEHS for an epidemiologic project to characterize the effect of roadway associated air pollution on the exacerbation of asthma in children, 2008-13.*
- Change in number of partners over the life of the project: *The partners have stayed the same over the years, with the exception of one new organization that joined to work on environmental public health activities.*

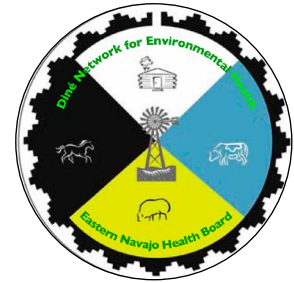
Metrics in Action... Focus on NIEHS...

NIEHS is interested in having PEPH research be part of research that is funded through regular NIH study sections. This funding would indicate that PEPH research is being incorporated into standard NIEHS research, without NIEHS having to release a special RFA. For this reason, we measure how well grantees do in specific study sections. By tracking this metric over time, we hope to increase the number of applications and awards funded through regular study sections. Grantees may also find it useful to track this information.

Chapter 2 Case Study: The DiNEH Project

Partner identification and relationship building

The Diné Network for Environmental Health (DiNEH) Project is an outgrowth of ongoing collaborations to address the long-term public health and environmental effects of exposure to 1,100 unremediated legacy waste sites from more than 50 years of uranium mining on Navajo Nation lands.



The Community Environmental Health Program of the University of New

Mexico (UNM-CEHP) developed the DiNEH Project at the request of the Eastern Navajo Health Board (ENHB, or “the Health Board”), which had long been concerned about the possible role of environmental agents in the high rates of kidney disease observed in the local population. The DiNEH collaboration, which includes the Southwest Research and Information Center (SRIC) and numerous Navajo research staff and consultants, has continued to evolve over the last decade and now works throughout all 110 chapters of the Navajo Nation. It currently includes three service units of Navajo Area Indian Health Service (NAIHS), two contract (PL-638) health care facilities, several Navajo agencies including the Division of Health and the Navajo Nation EPA, the Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry (CDC/ATSDR), and U.S. EPA Region 9. The focus of the project has expanded from water exposures and kidney health to environmental exposure effects on reproductive outcomes and child development at the request of affected communities. The DiNEH Project is characterized by a mature core of partners that operates as a team and is able to adjust the partnership to respond to community and research needs.

Metrics:

- Number and description of partners: *The DiNEH collaboration includes the Southwest Research and Information Center (SRIC) and numerous Navajo research staff and consultants, and all 110 chapters of the Navajo Nation. It currently includes three service units of Navajo Area Indian Health Service (NAIHS), two contract (PL-638) health care facilities, several Navajo agencies including the Division of Health and the Navajo Nation EPA, the Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry (CDC/ATSDR), and U.S. EPA Region 9.*

Build relationships with partners

The DiNEH team identified new partners based on community needs and cultural norms. For example, Native American communities typically involve medicine men in tribal decision-making, and in response to community requests the partnership seeks support from the medicine men’s organizations, provides updates, and solicits their advice. The original project also had to facilitate participation by 20 Navajo Chapters (similar to counties) and has worked with them to develop methods for regular communication of results. The UNM-CEHP also identified partners who brought key research skills to the project, such as people involved in clinical chemistry and those researching biomarkers of cardiovascular, kidney and autoimmune disease, as well as geochemists, hydrologists, and radiation biologists.

Partners worked together to identify the goals of the DiNEH Project.

These goals include:

- Examining the poorly understood interplay between toxicant exposures and behavioral and cultural factors.
- Educating community members and leaders about the possible role of water-borne agents in disease causation.
- Identifying safe and unsafe water sources.
- Increasing community capacity to carry out environmental health studies.
- Informing public policies to promote safe drinking water and reduce exposures to waste.
- Investigating the effect of uranium exposure on health.
- Working with clinicians to understand interactions of exposure with known risk factors for disease.
- Communicating environmental health concerns related to uranium wastes.

Metrics:

- Descriptions of how barriers to communication (e.g., cultural, language, educational) between partners were addressed: *Native American communities typically involve medicine men in tribal decision-making, and in response to community requests the partnership seeks support from the medicine men's organizations, provides updates, and solicits their advice.*

Expanded research collaborations

Partners recently identified a new research question they are beginning to address through the addition of new partners: understanding the effect of uranium exposure on reproductive outcomes and child development.

Metric:

- Number and descriptions of new research questions proposed by partners: *Partners identified one new research question – what is the effect of uranium exposure on reproductive outcomes and child development? The DiNEH team members developed many materials to communicate their findings to a variety of audiences and worked to influence policies for that will protect the health of tribal members.*

Summary of Partnership Metrics

Example Metrics for Activity 1: Identify partners

- Number of partners identified.
- Number of additional identified partners that could be added in the future.
- Number of contacts made with potential partners.
- Number of potential partners who express interest in the project.
- Number and description of needs of each partner.
- Number and description of resources that each partner can contribute.
- Description of benefits each partner may receive.
- Description of project goals as related to partnerships.
- Description of potential or perceived benefits of the partnership to each partner (e.g., increased visibility, increased access to priority populations, increased networking opportunities, technical assistance, connections to key partners, funding, improved image).
- Description of historical trust concerns between partners and descriptions of how these concerns will be addressed.

Example Metrics for Activity 2: Build relationships with partners

- Description of formal partnership agreement, including provisions and requirements.
- Number of partners who signed agreement.
- Re-evaluation of goals and mission.
- Description of how barriers to communication (e.g., cultural, language, educational) between partners were addressed.
- Description of how aspects of the relationship have changed over time.
- Lists of outreach and collaboration partnership activities, including number of partners involved, date, time and place of activity, who identified the issue, and approach and purpose of activity.
- Satisfaction level of grantees with partnership (quantitative or descriptive).
- List of partners and advisory board members.

Example Metrics for Activity 3: Involve partners

- Number and description of partners who contributed to identifying or framing research questions.
- Description of partners' contributions to research.
- Number and descriptions of concerns voiced by partners.
- Description of how concerns were addressed by partnership.
- Description of how resources were shared among partners.
- Number of hours partners participated in research.
- Description of partner involvement in research.
- Satisfaction level of grantees with involvement in research process (quantitative or narrative).
- Number and descriptions of interactions with partners.
- Number of partners in research project leadership roles.

Example Metrics for Activity 4: Communicate clearly with partners

- Number and description of messages disseminated.
- Number and description of media channels used to disseminate messages (radio, television, websites, brochures, live performances, etc.).
- Description of efforts to ensure bidirectional communication.
- Number of people who received messages (website hits, brochures taken, radio or television audience estimates, meeting participants).
- Level of awareness of messages.
- Level of comprehension of messages.
- Description of efforts to ensure culturally-appropriate messages.

Example Metrics for Activity 5: Maintain and improve partnerships and processes

- Number and description of partners added.
- Number and description of partners who cycle out of the partnership.
- Number and description of partners retained.
- Description of new needs.
- Description of new resources.
- Description of changes to research questions.

Example Metrics for Output 1: Multi-directional communication among partners

- Number and types of partners participating in communication activities (e.g., ethnic, cultural, and geographic diversity).
- Number and description of opportunities for partners to voice their opinions and needs.
- Description of contributions from partners.
- Description of exchanges that occur.
- Description of any adaptations made to communication styles or messages to reflect cultural appropriateness.

Example Metrics for Output 2: Commitment by partners

- Number of active diverse partners who represent research and community needs (e.g., funders, faith-based organizations, governmental and nongovernmental organizations, universities, etc.).
- Number of community partners participating in a grant application process.
- Description of resource sharing among partners.
- Level of funding committed by partners.
- Description and counts of other resources committed by partners (staff, volunteers, supplies, meeting space).
- Number of community partners participating in the research effort.
- Description of community support (e.g., letters of support, invitations to organizational events, funding contributions).
- Description of partner feedback.
- Number of partners signing memorandums of understanding or other commitment documents.
- Number of community partners willing to take on leadership roles (or number in leadership roles).
- Number of hours volunteers contributed.

Example Metrics for Output 3: Translation of scientific findings among partners

- Number and descriptions of materials that translate findings (see also [Chapter 4: Products and Dissemination](#)).
- Lists of co-authorship on materials that demonstrate a mix of partners.
- Description of subsequent funding for translation efforts.
- Description of support provided by target audience for translation efforts.
- Descriptions and counts of how partners are using findings in other settings.
- Number of requests for translated information by partners.
- Description of requests for materials by others.
- Anecdotal evidence indicating successful translation of scientific findings to new audiences [Chapter 1: Introduction Page 61](#).
- Number of publications that report on translation activities.
- Number and description of materials or products produced by partners that include research findings.

Example Metrics for Output 4: Community involvement in research

- Number of partners who participate in collecting data.
- Number of partners who participate in analyzing data.
- Number of partners who participate in developing messages to summarize results.
- Description of community involvement in research process.
- Number of partners who co-author papers.
- Number of new organizations who become involved in research and outreach.
- Number of partners who provide input to websites.
- Number of engaged students from communities.
- Number of theses, posters, doctoral dissertations, etc., related to the research.
- Description of feedback from the target community that demonstrates effective communication strategies tailored to partner audiences, including consideration of language and cultural differences.
- Number and descriptions of partners participating in seminars on campus and in the community, including numbers of contact hours.
- Frequency of invitations for partners to attend events of other partners.

Example Metrics for Impact 1: Sustainable partnerships

- Number of years the project or program has existed.
- Length of time partners remain involved with the partnership.
- Degree to which partners' organizations reflect a concern for environmental public health.
- Timeline of key milestones in partnership's history.
- Description of mutual influence.
- Descriptions of long-term plans and benefits to each partner.
- Description of strategies for sharing power among partners.
- Description of challenges identified by partners and how they are addressed.
- Description of the body of knowledge acquired while developing and sustaining new and existing partnerships.
- Number of organizations that have formal policies requiring participation in the partnership.
- Description of continued relevance of the project to partners.

Example Metrics for Impact 2: Increased awareness of issues and research process

- Trends in depth of understanding of community partners on environmental public health issues.
- Number of community partners who report increased awareness of environmental public health issues.
- Description of research findings reported in partners' materials, websites, and messages.
- Description of community mobilization around other environmental public health issues.
- Description of research findings reported in materials intended to change behaviors, policies, or regulations.
- Description of how public health departments changed materials based on research findings.
- Description of how schools have changed materials or curricula based on research findings.
- Number and description of new programs that have been added to address research findings.
- Number and description of new dissemination materials that have been added to address research findings.
- Description of how partners have applied knowledge of the research process to other issues.

Example Metrics for Impact 3: Expanded research collaborations

- Number and description of partners who express an interest in additional research projects.
- Number and description of new research questions proposed by partners.
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