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Using “Policy Briefs” to Present Scientific Results of CBPR: Farmworkers in North Carolina

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Abstract

Background: Using scientific results to inform policy that improves health and well-being of vulnerable community members is essential to community-based participatory research (CBPR).

Objectives: We describe “policy briefs,” a mechanism developed to apply the results of CBPR projects with migrant and seasonal farmworkers to policy changes.

Lessons Learned: Policy briefs are two-page summaries of published research that address a single policy issue using language and graphics to make the science accessible to diverse audiences. Policy brief topics are selected by community advocates, based on collaborative research, and

address a specific policy or regulation. Development is an iterative process of discussion with community representatives. Briefs have been used to provide information to advocates, state and national policymakers, and the public.

Conclusions: Disseminating CBPR results to address policy is needed. Collaborating with community partners to produce policy briefs ensures that information about concerns and struggles reflects their priorities.

Keywords

Policy, dissemination, implementation, vulnerable communities, community education

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CBPR is an approach that uses science to improve the health and well-being of individuals who live in the communities in which the science is conducted, as well as to improve the health and well-being of those living in similar communities. Using a CBPR approach, investigators work with community members to present scientific results in a format that community members can use, as in the development of health education and intervention materials.¹ A CBPR approach supports presenting information through the policy process to compel changes that address the health and well-being of community members.²

A CBPR approach seeks to tailor research to the needs of vulnerable communities in addressing health exposures and health inequities.³ As such, research using a CBPR approach should address the health hazards and needs of the communities in

which it is conducted. The results of this research should provide community members with tools that they can use to protect and improve their health, and that inform public health policy.^{4,5}

Using the scientific results of CBPR conducted with farmworker communities to address policy is especially important. Like the members of other vulnerable populations, farmworkers often have limited formal education, low incomes, and inadequate access to health care.^{6,7} In addition, farmworkers are largely Latino immigrants (most from Mexico) who have limited English language skills and often do not have legal documents to work in the United States, making them hesitant to address inequities in policy and regulation publicly.⁸ Migrant farmworkers with H-2A visas, although working with legal documents, are also hesitant to address policy and regulatory problems for fear of retribution from their employers.⁹⁻¹¹ Finally, farmworker vulnerability is amplified owing to the many exceptions to occupational health and

safety regulations that apply only to agriculture (referred to as “agricultural exceptionalism”).¹²

We have discussed using the science developed through CBPR projects to work with farmworker communities through health education.¹ These efforts have included mass communication with farmworkers using posters, flyers, and radio spots¹³; broad occupational health education based on safety videos and photonovelas^{14,15}; and targeted programs using lay health educators.¹⁶⁻¹⁹ Our efforts to apply the results of CBPR projects to public policy are also extensive, but not well documented. In this paper we describe “policy briefs,” one mechanism that has been used by farmworker advocates in addressing policy and regulatory change. Our discussion

expands on the work of others on why and how to develop research summaries in support of policy advocacy.²⁰

LESSONS LEARNED

Policy Briefs

CBPR, like all science, must be based on the highest standards. Those wanting to use the scientific findings of CBPR to change public policy and regulations are often confronted by powerful interests who profit from the status quo. These powerful interests, which include corporations that manufacture agricultural chemicals and machinery, as well as large commodity producer and processor associations,

Table 1. Policy Briefs Developed for Addressing Policy Affecting Migrant and Seasonal Farmworkers		
Topic	Regulation or Policy Addressed	Policy Brief Title and Source
Environmental exposures	US EPA Worker Protection Standard Hazard Communications Standard OSHA Field Sanitation Standard	Biomarkers of Farmworker Pesticide Exposure in North Carolina ³⁶⁻³⁷
	Occupational Safety and Health Act NC Occupational Safety and Health Act Hazard Communications Standard OSHA Field Sanitation Standard	Meeting the Requirements for Occupational Safety and Sanitation for Migrant Farmworkers in North Carolina ³⁹ Cotinine Levels for North Carolina Farmworkers ⁴⁰ Heat Illness Experienced by North Carolina Farmworkers ⁴¹
Housing	Migrant and Seasonal Agricultural Worker Protection Act	Housing Conditions in Temporary Labor Camps for Migrant Farmworkers in North Carolina ⁴²
	OSHA Temporary Labor Camp Standards	Migrant Farmworker Housing Violations in North Carolina ⁴³
	US EPA Worker Protection Standard	Drinking Water Quality in NC Migrant Farmworker Camps ⁴⁴
	NC Migrant Housing Act	Quality of Kitchen Facilities in NC Migrant Farmworker Camps ⁴⁵ Residential Pesticide Exposure in North Carolina Migrant Farmworker Camps ⁴⁶
Hired youth farmworkers	Child Labor Requirements in Agricultural Occupations Under the Fair Labor Standards Act (FLSA)	Safety and Injury Characteristics of Youth Farmworkers Working in North Carolina Agriculture ⁴⁷
	Migrant and Seasonal Agricultural Worker Protection Act	Hired Youth Farmworkers in North Carolina: Work Safety Climate and Safety ²²
	Occupational Safety and Health Act	
	NC Occupational Safety and Health Act	
	Hazard Communications Standard OSHA Field Sanitation Standard	
Health services	Patient Protection and Affordable Care Act	Providing Information About the Affordable Care Act to Latino Immigrants
		Alcohol Consumption and Potential for Dependence among North Carolina Farmworkers ⁴⁸

All policy briefs are available <http://www.wakehealth.edu/Center-for-Worker-Health/Policy-Briefs.htm>

use their resources to dispute CBPR scientific results in an effort to maintain their dominant position. Therefore, the publication of CBPR scientific results in the peer-reviewed literature is an important component in the political process for affecting changes. Public agency and legislative staff often rely on the peer-reviewed literature. Presentations based on peer-reviewed articles can have greater weight than those based on the experiences of community members.

Providing a summary of results from peer-reviewed papers in a format that is easily accessible to community advocates and to policymakers (often elected officials with limited content area knowledge, training, or time) can facilitate policy discussion and change. Our approach to summarizing results for consumption by community members and policymakers is the “policy brief.” A policy brief is a two-page (front and back of a single sheet) document that uses graphics and text to summarize the key results of a scientific paper, and link those results to specific policy recommendations. Policy briefs provide some background information on the issue being addressed and a short description of the research methods. They also provide the citation to the full work on which the brief is based.

We have developed 13 policy briefs since 2010 based on the results of research with the North Carolina farmworker community (Table 1; Figures 1 and 2). These briefs address current issues that are of considerable concern to farmworkers, service providers, and advocates, and for which policy changes could improve the health of farmworkers and their families: pesticide exposure, occupational nicotine exposure, housing, child labor, and access to health care.

Developing a Policy Brief

Topics selected for policy briefs must meet three criteria. First, the topic must be identified as important to farmworker health by community representatives or advocates. Second, it must be based on research that has been conducted collaboratively with community representatives or advocates. Our CBPR partnership with farmworker organizations in North Carolina has allowed us to develop collaborative research that addresses their concerns. We have developed large research projects that respond directly to the concerns of clinicians who provide care for farmworkers (i.e., National Institute for Occupational Safety and Health– and National Institutes of Health–funded

projects on green tobacco sickness and farmworker skin disease) and of service providers (i.e., National Institutes of Health–funded projects on farmworker housing). When data on specific policy issues raised by community partners are not available, as in the case of child labor issues and the Affordable Care Act, we have expanded existing research programs to collect these data. All of these projects have included community organization and clinic staff as co-investigators.

Finally, the policy brief must address a clear policy or regulation. Policy briefs have addressed pesticide exposure for farmworkers, an issue with which the U.S. Environmental Protection Agency has been involved over the past decade in developing revised safety standards, the Worker Protection Standard (<http://www.epa.gov/pesticide-worker-safety/revisions-worker-protection-standard>); housing regulations for migrant farmworkers, the focus of a national discussion concerning housing quality and enforcement of federal and state standards,²¹ and child labor, for which current regulations allow exceptions to child labor laws that apply only to agriculture and allow children as young as 10 years old to work for hire in one of the nation’s most hazardous industries.^{22–26} Other policy briefs have addressed specific health services concerns, including farmworker access to insurance through the Affordable Care Act, and alcohol consumption and dependence. Generally, the authors of the published papers, along with community representatives and advocates (often those collaborating in the CBPR), have expertise in the policy issue being addressed; if needed, individuals with the additional expertise would be contacted.

Policy brief development is a component of CBPR.² Community participation is key for the iterative design process to ensure that language and policy recommendations are appropriate for the intended audience (Figure 3). The development process begins with CBPR focused on a community identified policy issue. Research results are presented in a peer-reviewed journal article. Advocates identify germane issues and prioritize messages. An outline of the brief, listing research results and policy recommendations is developed, reviewed, and revised by community and academic partners. When consensus is reached on content, work begins on design, including text and graphics. Outlines and draft design are reviewed by individuals and presented at project meetings for broader discussion. Drafts must go through several iterations



Center for Worker Health

Wake Forest School of Medicine

POLICY BRIEF

Drinking Water Quality in NC Migrant Farmworker Camps

Summary

Water is the essence of human life. It is part of every cell, and is vital for every function of our body. The World Health Organization has declared that safe water is a basic human right. Migrant farmworkers in the United States are at increased risk for illness and injuries, including those that result from consuming unsafe drinking water. The quality of drinking water was studied in 181 migrant farmworker camps in eastern North Carolina from June through October, 2010.

One-third (61) of the camps failed standard tests for drinking water safety. Bacteria usually found in human and animal waste were found in the water samples collected at these camps. This contamination poses a risk to the health of farmworkers and to those living in surrounding communities. Changes are needed to secure safe water in migrant farmworker camps, including water monitoring in more camps, stronger enforcement, and changes to regulations, such as testing water during occupancy.

What did the researchers do?

From June through October, 2010, the researchers studied 181 migrant farmworker camps in 16 eastern North Carolina counties. The study had three parts.

1. Researchers questioned two workers in each camp about housing.
2. They used the NC Department of Environment & Natural Resources guidelines to collect water samples in each camp. The water samples were tested in state-certified labs to check for total coliform bacteria and *E. coli*.
3. They measured 49 factors that could affect water quality. These included overall camp cleanliness and distance from animal barns.

What did they find?

One-third of the camps studied (61 of 181 camps) failed state water quality requirements. These camps failed the test for total coliform bacteria, meaning that the levels of bacteria in the water were high enough to cause health concerns. Two of the camps also had *E. coli* in the water. Coliform bacteria are indicators of



Kitchen sink in a farmworker camp that participated in this study.

Drinking Water Quality in NC Migrant Farmworker Camps

Research for this Policy Brief is reported in: Bischoff W et al. The quality of drinking water in North Carolina farmworker camps. *American Journal of Public Health* 2012; 102(10):e49-e56.

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figure continues

Figure 1. Policy brief, Drinking Water Quality in NC Migrant Farmworker Camps.

contamination from human and animal waste. They signal the presence of disease-causing germs in the water.

The researchers looked at many factors for each camp that could affect water safety. These included housing conditions and distance from animal barns. They also examined whether the camps had a Certificate of Inspection from the NC Department of Labor, and whether the source of the camp’s water was a “nontransient, noncommunity (NTNC) public water system.” None of these factors made a difference in the results of the water quality tests.

Why does it matter?

Testing drinking water is vital to protect the public from serious diseases. High levels of coliform bacteria were present in many of the migrant farmworker camps, indicating that the water contained human or animal waste. Contaminated water puts the health of the workers who drink it at risk. It also puts the health of the surrounding community at risk because they may be using water from the same sources.

Drinking water polluted by human or animal waste can cause serious health problems. These include symptoms such as diarrhea, vomiting, and dehydration. They also include diseases such as hepatitis A, Legionnaires’ disease, and cholera. When a water system is polluted, large numbers of people can get sick.

A NC Department of Labor Certificate of Inspection indicates that a migrant farmworker camp had passed a water quality test before the farmworkers arrived. NTNC public water systems are required to be tested for water quality regularly. Neither of these factors was related to water quality in the camps. This indicates that current regulations are not sufficient to protect water quality in migrant farmworker camps.

Recommendations

In order to improve health and safety of migrant farmworker housing, the researchers provide three recommendations:

1. Stronger enforcement of existing regulations by state agencies. Fines should reflect the seriousness of health risks posed by unsafe water.
2. Test water in more camps to ensure safe water for more people.
3. Conduct water testing when migrant farmworker camps are occupied, not just before farmworkers arrive for the season. Additional testing would assure water safety throughout the season.

Further Reading

Previous studies of drinking water in farm labor camps found similar problems:

Vanderslice J. Drinking water infrastructure and environmental disparities: evidence and methodological considerations. *American Journal of Public Health* 2011;101:S109-S114.

Ciesielski S et al. The microbiologic quality of drinking water in North Carolina migrant labor camps. *American Journal of Public Health* 1991;81:762-764.

Definition of Terms:

Coliform Bacteria – Coliform bacteria are germs found in the waste of warm-blooded animals, in soil, on plants, and in rivers and lakes. These germs do not usually make you sick. However, because germs that do cause disease are hard to test for in the water, “total coliforms” are tested instead. If the total coliform count is high, then it is very possible that harmful agents like viruses, bacteria, and parasites might also be found in the water.

E. coli – A type of coliform bacteria found in human and animal waste. *E. coli* are usually harmless. However, a positive *E. coli* test may mean that human waste and harmful agents have found their way into the water system. These harmful agents can cause serious disease.

Exposure – Contact with something by swallowing, breathing, or touching the skin or eyes. Exposure may be short-term or long-term.

Migrant Farmworker – Someone who leaves home and travels to reach a farm where they have temporary work. Many migrant workers travel from state to state, or cross from one country into another to work on a farm.

Nontransient, Noncommunity Public Water Systems – A public water system that regularly serves at least 25 of the same people for more than 6 months each year; for example, schools, factories, office buildings, and hospitals that have their own water systems. They are regulated by the Safe Drinking Water Act of the US EPA and the North Carolina Rules Governing Public Water Systems.

Figure 1. *continued*



Center for Worker Health

Wake Forest School of Medicine

POLICY BRIEF

Heat Illness Experienced by North Carolina Farmworkers

Summary

Heat exposure is a significant hazard for workers in manual occupations, including farmworkers. Yet little is known about the number of North Carolina farmworkers who experience heat illness. This study delineated the prevalence of heat illness among farmworkers, and actions farmworkers took to reduce the effects of heat. In August 2013, 101 North Carolina Latino male farmworkers completed interviews in which they reported on heat exposure and behaviors over the previous 3 months while working outdoors. Over a third of farmworkers reported heat illness. To reduce the effects of heat, farmworkers reported taking breaks in the shade and drinking more water. Fewer farmworkers took breaks in air-conditioning, or changed work hours or activities to reduce the effects of heat. Over a quarter of the participants spent their after-work time in housing that was extremely hot. Policy addressing heat illness is needed.

Why does it matter?

Heat illness occurs when high temperatures and humidity limit the body's ability to cool itself. Heat cramps, heat exhaustion, and heat stroke are three forms of heat illness. Many North Carolina farmworkers experience heat illness and several die from heat each year; over the period 1992-2006, almost 2.5 for every 100,000 North Carolina farmworkers died of heat illness (MMWR 2008; <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5724a1.htm>). Symptoms that indicate heat illness include hot and dry skin, sudden muscle cramps, dizziness, confusion, and nausea or vomiting.

Heat illness can be prevented through purposeful hydration (drinking water at the rate of half a liter every thirty minutes) and deliberate cooling of the body (resting in shade or air-conditioned areas). Changes in when tasks are undertaken (early or late in the day rather than in the middle of the day) can also reduce overheating. However, only two states, California and Washington, currently have policies requiring agricultural employers to address heat illness prevention.

What did the researchers do?

In August 2013, researchers interviewed 101 Latino male migrant farmworkers working in three North Carolina counties (Harnett, Johnston, Sampson). Farmworkers were asked about working and living conditions, the occurrence of heat illness symptoms in the previous 3 months while working outdoors, and behaviors to reduce the effects of heat illness. A farmworker was considered to have heat illness if he reported experiencing any of the symptoms of hot and dry skin, sudden muscle cramps, dizziness, confusion, or nausea or vomiting.



Research for this policy brief is reported in:

Arcury TA, Summers P, Talton JW, Chen H, Sandberg JC, Spears Johnson CR, Quandt SA. Heat illness among North Carolina Latino farmworkers. *Journal of Occupational and Environmental Medicine* 2015; 57(12):1299-1304.

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figure continues

Figure 2. Policy brief, Heat Illness Experienced by North Carolina Farmworkers.

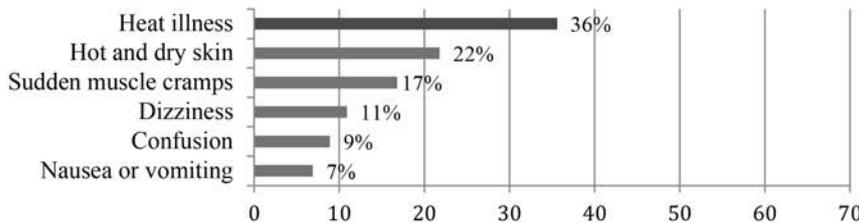
What did the researchers find?

Heat Exposure

- 68% of farmworkers reported having worked outdoors in extremely hot weather conditions in the previous 3 months.
- 27% reported spending after-work time in housing that was extremely hot.

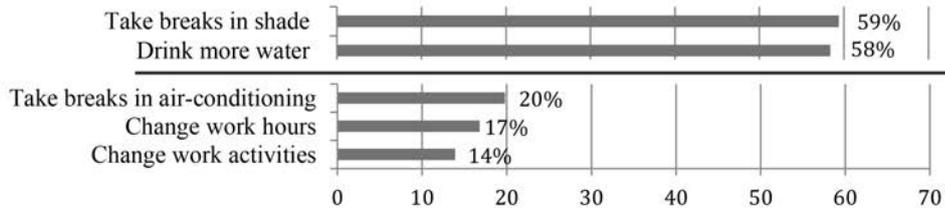
Heat Illness and Symptoms

- 36% experienced heat illness, with hot and dry skin, sudden muscle cramps, and dizziness being common symptoms.



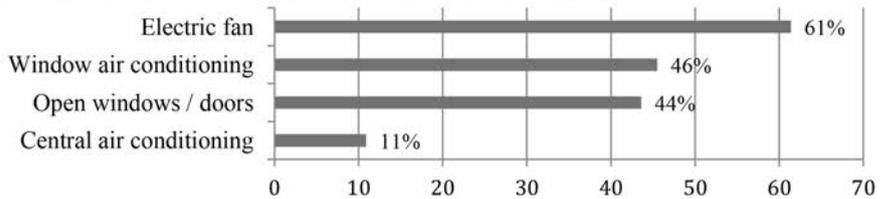
Reducing the Effects of Heat While Working Outdoors

- The behaviors that most farmworkers used to reduce the effects of heat were those that they could control: taking breaks in the shade and drinking more water.
- Few took breaks in air-conditioning, changed work hours, or changed work activities, behaviors over which they had little control.



Reducing the Effects of Heat at Home

- Most farmworkers used electric fans to cool their houses; fans move hot air, rather than cool the air.
- A substantial number of farmworkers had access to air conditioning.



Recommendations

- Policies that empower farmworkers to guard themselves against heat illness are needed.
- Enforcement of current regulations (OSHA Field Sanitation Standards) should be increased to ensure that workers have access to water when working.
- Labor camps should be required to have air conditioning.
- California’s Cal/OSHA Heat Illness Prevention Standard (<http://www.dir.ca.gov/dosh/heatillnessinfo.html>) provides a policy framework; the California policy has been implemented, evaluated, and proven to reduce deaths. This standard includes:
 - Training all employees and supervisors about heat illness.
 - Providing enough fresh water so that each employee can drink at least 1 quart per hour, and encouraging them to do so.
 - Providing access to shade and encouraging employees to take frequent cool-down breaks in the shade for at least 5 minutes; they should not wait until they feel sick to cool down.
 - Developing and implementing written procedures for complying with the regulations.

Figure 2. continued

in which content and presentation are refined. This process can take several months to allow all stakeholders, including multiple advocates, community partners and scientists, to critique each new version of a policy brief. Individual stakeholders read and comment on the different drafts. owing to the time it takes for a policy brief to be developed, the process is often begun when a research paper is submitted for review; the review and revision process of a scientific paper often takes longer than the design of the policy brief.

The steps for developing a policy brief begin with summarizing research results and outlining policy recommendations supported by the research results. Text and graphics to present the results are drafted. A draft brief is then presented to different stakeholders (community members, advocates, services providers, researchers) for comment and critique, and the draft is refined until consensus is reached. Drafts are presented to groups of stakeholders for review. Advocates and community groups are important partners in the design process, ensuring that pertinent information is prominent, and accessible to non-specialists. We use a graphic design artist, when possible. Engaging multiple stakeholders in drafting policy briefs provides feedback and perspectives from other vantage points. Encouraging stakeholders in the design of

policy briefs increases their impact in a wider audience.

The content of policy briefs is designed for focused and concise communication, using simple and consistent language to address a single topic. Content generally includes a summary of the brief, a short description of the policy issue being addressed (“Why does it matter?”), a photo related to the topic, an explanation of how data were collected (“What did the researchers do?”), and definitions for technical terms. Research results (“What did the researchers find?”) are presented clearly, often using graphics to supplement text. Graphics include simple charts, including pie charts and bar graphs. More complex findings are presented as text bullets. Specific policy recommendations are presented. The citation for the peer-reviewed paper(s) on which the policy brief is based is included. Contact information is provided. When appropriate, and space allows, references for further reading are included.

Using Policy Briefs

Farmworker advocates have used the policy briefs to address diverse audiences. They are used to educate other farmworker advocates and outreach workers, such as Student Action with Farmworker staff and interns. The policy briefs provide a summary of key points from published articles that

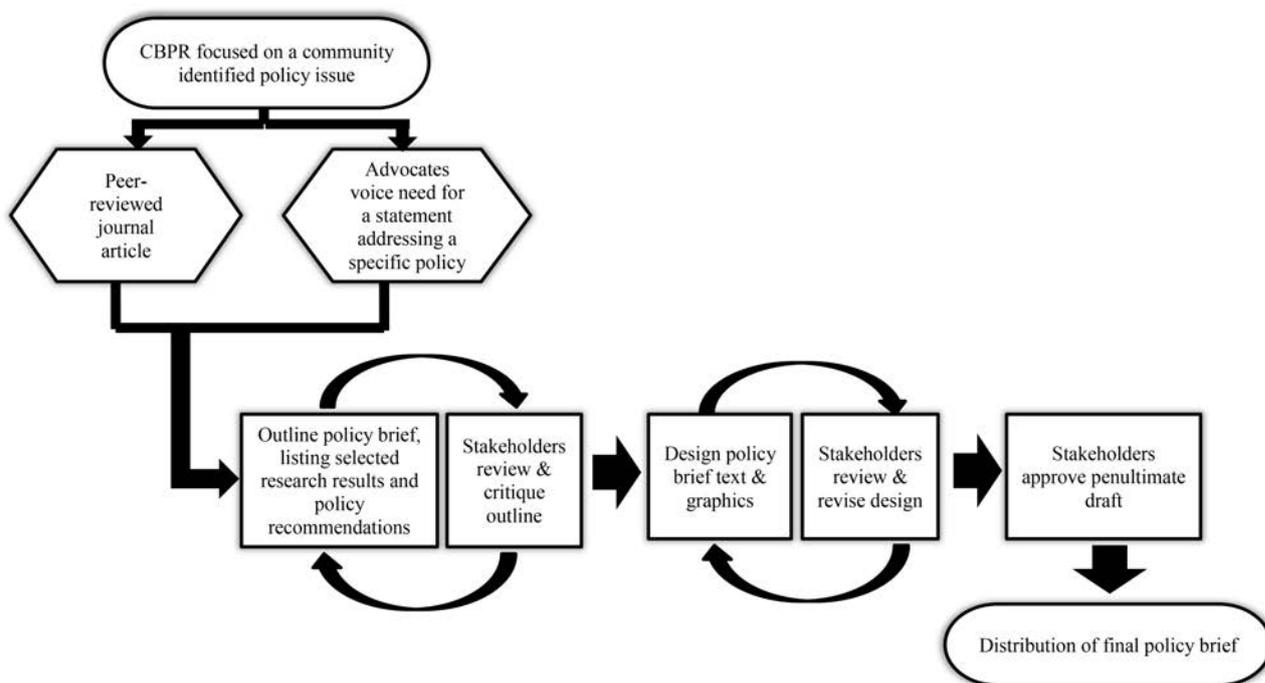


Figure 3. Flow chart for designing a policy brief.

advocates and community organization staff may not have the time or background to read. They are used to inform policymakers and regulators. Policy briefs have been used by advocates to provide facts in letters to government officials, or an entire brief may be included with a letter. For example, North Carolina Farmworker Advocacy Network members have used policy briefs to document specific issues, such as child labor practices and farmworker pesticide exposure, in letters to the North Carolina Commissioner of Labor. Policy briefs have also been used in letters to the U.S. Environmental Protection Agency Administrator in reference to changes in the Worker Protection Standard (pesticide safety). Advocates also use the policy briefs when consulting with legislators and enforcement officials; rather than give them a policy brief, the advocates base their oral presentations on the brief. Policy briefs are used to inform the general public about farmworker issues. They are included in blogs and provide the basis for public presentations.

Policy briefs often address long-standing issues; in these instances, the release of a policy brief may be delayed to correspond with the start of a policy initiative. In all but one instance, policy briefs have been released only after the journal article on which they are based have been accepted for publication. For a recent policy brief addressing a timely issue, recruiting Latinos for coverage under the Affordable Care Act, the brief was developed quickly to be used during the ACA enrollment period, before a manuscript was written and submitted. A paper using these data has been written, but it addresses issues separate from those reported in the policy brief.⁴⁹

Advocates have seldom used the policy briefs to provide information directly to farmworkers because direct community education is developed for this purpose by our CBPR partners. These partners use the research results described in the policy briefs to develop specific procedures for farmworkers to use to improve occupational safety and family health. This community education often speaks directly to farmworkers, for example, through radio announcements and lay health

educator programs, and the educational materials are shared with farmworker organizations to use in their programs.

We have not conducted evaluations to determine the efficacy of the policy briefs. However, that advocates and community organization leaders request that we continue to develop them indicates they are filling a need.

CONCLUSIONS

Dissemination of results from CBPR beyond the scientific literature continues to be a concern.²⁷⁻²⁹ Discussions of how best to return results to individual participants and to their larger communities have been presented.^{30,31} Several case studies of how CBPR has included campaigns to change specific policies are available.³²⁻³⁵ Those engaged in CBPR programs have seldom discussed how to craft tools that can be used for ongoing policy discussions.²⁰ Policy briefs provide quick access to current research findings for policymakers, as well as for advocates, service providers, community members, and other stakeholders. Using uncomplicated language helps a wider range of audiences engage with the findings. Using simple graphics allows the “numbers to talk.” Policy briefs documenting the hazards migrant farmworkers endure have been a vehicle for advocacy. Collaborating with community partners to produce policy briefs ensures that information about concerns and struggles reflects their priorities. Further discussion of how CBPR results should and can be used to affect policy change is needed.

Finally, the policy brief development and review process has additional dividends for the CBPR process. It strengthens the relationship between scientists and advocates, and those conversations and relationships can lead to research in areas of top priority to advocates and the larger community.

ACKNOWLEDGMENTS

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