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Aligning Community Engagement With Traditional Authority Structures in Global Health Research: A Case Study From Northern Ghana

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Despite the recognition of its importance, guidance on community engagement practices for researchers remains underdeveloped, and there is little empirical evidence of what makes community engagement effective in biomedical research.

We chose to study the Navrongo Health Research Centre in northern Ghana because of its well-established community engagement practices and because of the opportunity it afforded to examine community engagement in a traditional African setting.

Our findings suggest that specific preexisting features of the community have greatly facilitated community engagement and that using traditional community engagement mechanisms limits the social disruption associated with research conducted by outsiders. Finally, even in seemingly ideal, small, and homogeneous communities, cultural issues exist, such as gender inequities, that may not be effectively addressed by traditional practices alone. (*Am J Public Health.* 2011;101:1857–1867. doi:10.2105/AJPH.2011.300203)

> There is a saying that a stranger has eyes but he cannot see. That is why it is good to see the chief to introduce you to the community. (Focus group discussions with chiefs and elders)

WITH GROWING RECOGNITION that communities can suffer research-related harms and exploitation, community engagement (CE) has become an important ethical requirement for research, especially when conducted in low and middle-income countries by investigators from high-income countries.[1–4] Community engagement has been defined as

> the process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people.[5]

Guidance on CE practices for researchers and public health workers remains general and underdeveloped,[6] although 2 of us (J.V.L, P.O.T) recently published a preliminary framework for CE in global health research that provides a general overview of the scope of relevant CE activities.[7]

Although there is a growing body of research on various aspects of CE,[8–14] little empirical evidence exists of what makes CE effective in biomedical research.[15] The evaluation of CE is complex and rarely involves direct measures of success or impact, in part because the precise goals in any context are rarely articulated. What constitutes a community in the context of research or public health intervention is also rarely stipulated. In longstanding initiatives, such as the Navrongo Health Research Centre (NHRC; see box on page 1858) in northern Ghana (see box on page 1859), CE practices have evolved along with the relationship between communities and research institutes. Research and interventions can affect a wide range of actors with legitimate interests in these

Background of the Navrongo Health Research Centre

- The Navrongo Health Research Centre (NHRC) started out as a field site for the Vitamin A Supplementation Trial (VAST) in 1989 (http://www.navrongo.org).
- The VAST was initiated by researchers at the London School of Hygiene and Tropical Medicine and was facilitated by local researchers in Ghana.
- As the first community-wide research activity in the Kassena-Nankana district, the VAST became the main source of identification for the NHRC and is still generally referred to as VAST by members of the community.
- Following the successful completion of the VAST in 1992, the Ghana Ministry of Health adopted the site to serve as one of its health research centers.
- The NHRC's mandate is to investigate the health problems affecting the northern sector of the country and to inform policymakers at the district, regional, and national level.
- The NHRC runs a demographic surveillance system.[16] This is a database that records all vital events in the district through house-to-house visits by fieldworkers of the NHRC. It is updated every 4 months with births, deaths, pregnancies, education level, and in and out migrations. The database thus maintains vital information on all individuals, their ethnic background, and the compounds and households in the district. This facilitates an optimal selection of samples and maximizes the follow-up of study participants.
- Although the NHRC is part of the Ghana Health Service, most of its research activities are funded by external sources, such as the National Institutes of Health, the Rockefeller foundation, the US Agency for International Development (USAID), the UK Department for International Development (DFID), the Bill and Melinda Gates Foundation, and the World Health Organization (WHO).
- Most of the NHRC's research has focused on communicable diseases, (including malaria, diarrhea, meningitis, HIV/AIDS, and lymphatic filariasis) but it has also included educational interventions, such as adolescent reproductive health and female genital mutilation.
- Several findings from these studies have subsequently informed both national and international health policies, including routine administration of vitamin A to infants, the use of impregnated bed nets for malaria control, and a community-based approach to health delivery and provision of family planning services.
- Over the years, the NHRC has reached out widely in the Kassena-Nankana district, and most residents of the district have participated in at least one of the Centre's research projects.[17]

activities. They can also create new communities[18] and their impact can be broader than any specific segment of the population. Importantly, in our view, CE is a process that continues from the earliest interactions with the community in question to relationships beyond the end of the research or intervention.[7]

The NHRC was established in 1989 as a field site for the Vitamin A Supplementation Trial (VAST) by researchers from the London School of Hygiene and Tropical Medicine and the Ministry of Health of Ghana. In 1992 the facilities were converted into a national health research center. Findings from some of the center's research projects have informed national policies on issues such as the administration of vitamin A to infants,[19] the use of insecticide-impregnated bed nets to reduce malaria transmission,[20,21] and a community-based approach to health delivery and provision of family planning services.[22,23] Publications from these studies have also highlighted the role of local sociocultural factors on the design and implementation of research projects.[23–26] Over the past 20 years, the NHRC has developed an approach to CE that is tightly integrated with local decision-making practices and traditional authority structures in the community. However, a retrospective examination of the CE practices of the NHRC and the role of these practices in the evolution of the center has not been conducted.

As part of a series of 10 case studies that we have undertaken in the Ethical, Social, and Cultural Program for the Bill & Melinda Gates Foundation's Grand Challenges in Global Health initiative,[27] we studied the NHRC's approach to CE in the Kassena-Nankana administrative district. We chose to study the NHRC because of its well-established CE practices and because of the opportunity it afforded to examine CE in a traditional African setting. We aimed to describe the CE practices routinely used for studies conducted through the NHRC and to identify key factors that might help to explain the center's success. In particular, we sought to clarify the processes and underlying cultural norms that informed the community entry practices by which outside or foreign investigators gained access to the community to conduct their research.

METHODS

We conducted a case study in the Kassena-Nankana district (KND) of northern Ghana in collaboration with the NHRC. Following NHRC practices, we conducted community entry activities with all 10 paramountcies of the district, explained the study to the paramount chiefs and elders, and sought their permission to approach other members of the community.

We used a qualitative case study approach[28] to explore the various features of the NHRC's CE process and how it has been perceived by a range of stakeholders such as researchers, community leaders, and research participants. There is no definitive account of what constitutes "community engagement" in research and, therefore, we did not impose any specific framing of CE on our study participants. Instead, we sought their perspectives and experiences with the CE practices of the NHRC, including any evaluative views of these CE practices. The study was carried out over a period of 1 year,

The Kassena-Nankana District

- The Kassena-Nankana District (KND) is one of the administrative districts of northern Ghana.
- The KND is situated in the Upper East part of the country, close to the border with Burkina Faso. It covers a land area of 1675 km^2 and has an estimated population of 151 000.
- The 2 main ethnic groups that live in the district are the Kassenas and the Nankanis. The groups share a traditional, rural agrarian culture and traditions, such as chieftaincy and line of authority as well as women's overall status in the community, but speak different languages.
- The KND district is divided into 10 paramountcies, 6 of which are Kassena. Typically, a paramountcy is home to between 10 000 and 20 000 people. Each paramountcy is headed by a male chief and a council of elders, also men.
- Within these paramountcies, the Kassenas and Nankanis are grouped into compounds, which are normally led by the most senior man. Compounds are then further divided into households, in which multiple generations of a family typically reside.
- Nonliteracy rates among the Kassenas and Nankanis are very high, with an estimate of 57% of the adult population having never been to school (Navrongo Demographic Surveillance System reports).

between September 2007 and August 2008.

We conducted 20 in-depth interviews and 10 focus group discussions, each of which involved between 8 and 20 paramount chiefs, elders, women's group leaders, youth leaders, or researchers of the NHRC. We ensured a fair representation of both the Kassenas and Nankanis ethnic groups in the KND by including an equal number of community respondents or research participants from each group. An overview of the characteristics of the interview participants is provided in Table 1.

The guides for the interview and focus group discussions were developed according to the following domains: (1) description of CE in practice, (2) stakeholders' perspectives of CE, (3) determinants of effectiveness of CE, and (4) lessons learned by stakeholders through their experience with CE in the NHRC. We asked the participants open-ended questions about the process of CE, their role in that process, the factors that contributed to successful CE, challenges encountered in the CE process, and recommendations for improvement. The interview guide and the consent forms were translated into Kasem and Nankam, the 2 dominant languages of the KND.

Although the initial interview guides did not change significantly over the course of the study, we used several follow-up questions during the interview to seek further clarification on responses. Also, because of our observation of the clear underrepresentation of women's views, we specifically designed another set of questions for interviews with women in which we aimed to develop a deeper understanding of gender inequalities within the community and how they affected the CE process. We also sought feedback during the study on some of our emerging themes from the chiefs and elders, particularly about the participation of women in CE processes.

Eight interviews were conducted in the local language of the respondents, and the remaining 12 interviews were conducted in English. All focus groups were conducted in the local language of the participants (either Kasem or Nankam). The in-depth interviews lasted between 30 and 45 minutes, whereas the focus group discussions lasted between 45 and 75 minutes. All were transcribed and translated.

To corroborate and expand on information gained through these interviews, we also observed 5 CE activities of a malaria research project: 4 community entry processes with the chiefs and elders

TABLE 1—Summary of the Study Sample: Kassena-Nankana District of Northern Ghana, September 2007 to August 2008

Research Participants and Data Collection Method	Participants by Ethnicity, No.	Participants by Gender, No.
Chiefs and elders		100 (all men)
8 focus groups	4 Kassena, 4 Nankani	
2 in-depth interviews	1 Kassena, 1 Nankani	
NHRC researchers and field coordinators		
8 in-depth interviews	–	8 (6 men, 2 women)
Participants in NHRC-sponsored research		
2 focus groups	1 Kassena, 1 Nankani	18 (all women)
6 in-depth interviews	3 Kassena, 3 Nankani	6 (3 women, 3 men)
Women group leaders: 4 in-depth interviews	2 Kassena, 2 Nankani	4 (all women)

Note. NHRC = Navrongo Health Research Centre.

and a community durbar. Detailed field notes of these observations were taken by 2 of us (P.T. and R.A.) and were analyzed alongside the interview transcripts.

We took several steps in our data analysis to ensure a fair interpretation of the data from an insider and outsider point of view. First, 2 of us (P.T. and R.A.) conducted all the individual interviews and focus group discussions in English and the local languages. Second, the initial coding of the interview transcripts was conducted by P.T. by using the qualitative data software ATLAS.ti version 5.2 (ATLAS.ti Scientific Software Development GmbH, Berlin, Germany). Guided by the objectives of the study, we then further developed codes such as traditional authority, social roles, community acceptance, research process, and benefits into broad emerging concepts such as community mapping, building trust relationships, research benefits, and women's involvement in CE. Further in-depth analysis, including critical deliberation about the initial coding, was conducted during extensive conference calls with the rest of us in Toronto. Third, a separate analysis of the primary data was conducted by an independent qualitative researcher (L.R.). This separate analysis was then compared with the analysis prepared by the core research team and a "best-fit" interpretation was developed, through meetings and iterative drafting, to best reflect the study data. Important concepts and themes were agreed on, and quotes from various informants were chosen that best represented the ideas and concepts presented below.

RESULTS

The NHRC's close integration into the local community has been a determining factor in the development of a strong working relationship between the NHRC and the Kassena and Nankani people. We describe how this progressive integration or absorption into the communities over time was achieved by paying close attention to the traditional inner workings of the local communities and by providing tangible benefits to the community. Although we did not find evidence of a formal process for prioritizing some aspects of CE over others, we were struck by the emphasis placed on appropriate and respectful entry into the community.

Mapping the Introduction to the Community

> I would expect that anybody who is coming from the international community and has no background to our district would do a series of things. At least you have to know the community, come into the community and do some kind of community mapping, and within that process you would get to know that there are various levels of authority in the community. (Interview with NHRC research officer)

Researchers seeking entry into unfamiliar traditional settings may be unsure about how to proceed or what approaches are most likely to be perceived as respectful and constructive by the community. Rules and social conventions may exist, but they are often not articulated explicitly or documented in a single source. This was originally the case in the KND, where the transmission of local culture is primarily done orally. To address this issue, the NHRC conducted an exercise in community mapping that described the hierarchies of authority and decision-making pathways within the various KND communities. This exercise was conducted as part of the original site selection process associated with the 1989 community-based VAST. The development of this social map was first conducted through several early site visits by the VAST investigators, during which meetings with key district authorities were organized.

This initial exercise in social mapping revealed the pathways by which the VAST investigators could respectfully enter the community. It also made it clear that external investigators would also require knowledgeable community members to facilitate entry, perform introductions, and generally assist the investigators with their navigation into the community.

> . . . [O]ne has to always follow a hierarchy; you have to understand that there is a system; the community does not just exist and you can just go into it and do whatever you want and pull out. You have to understand it is a system; you have to understand that there is a traditional setting and therefore you have to follow the protocol, the hierarchy, get to know the various people and get them involved before you can do whatever you want to do. (Interview with NHRC research officer)

In the early days of the NHRC, a formal request to approach the paramount chiefs would be delivered by the District Secretary, but current practice is more flexible and the formal request, which is typically made in writing, is usually sent by NHRC staff. In response to this request, the chief may choose to assemble his subchiefs and elders to receive the visitors and hear their request. These key figures also played an important role in helping the researchers secure the resources, such as accommodation and office space, necessary to initiate a process of long-term engagement with the community.

The goal of the first meeting with the relevant paramount chiefs is to obtain permission to engage with the specific communities the researchers are aiming to work in. If the paramount chiefs and other leaders agree that the proposed research would be beneficial, the researchers may be granted access to the communities.

> If one hadn't gone through the right procedure. . . that is, seeing the district authorities and the paramount chiefs and the subsection chiefs and so forth, there might have been a lot more suspicion about what was going on, why we were doing this, who we were, do we have permission to do this. Essentially, this study would not have been accepted. (Interview with external researcher)

Once researchers have been granted access to the community, chiefs and their elders may continue to assist them at a practical level by identifying key contacts within the community who will facilitate access to individuals eligible to participate in the research. Approaching individuals and communities via chiefs and elders helps to allay suspicion, to nurture trust, and to establish the

researchers' credibility. The chiefs are the most powerful representatives of community interests, and their endorsement carries a great deal of weight for community members.

Engagement Processes Familiar to the Community

This early channeling of outside researchers into traditional pathways of engagement and decision-making effectively captures them into a process that is culturally appropriate and familiar to the community. This process gives the community some control over the tone and proceedings of the initial engagement and may contribute to its success by limiting the introduction of disruptive new social practices associated with research.

The presentation of gifts to the paramount chiefs during the initial meeting is an expected custom, although not strictly mandatory. Although opinions varied on what gifts visitors should bring for the chief—from food to tobacco, livestock, and even agricultural implements—the presentation of cola nuts and alcohol was generally considered culturally appropriate. There was a general understanding that the traditional presentation of gifts is a required cultural practice and a symbol of respect to the community more broadly, rather than simply an individualized benefit to the chief. Researchers did not express concerns about these presentations, and there was no indication that the chiefs demanded more gifts apart from what was culturally expected.

> It is part of our culture; whatever you are doing, if there is no tobacco, it is not proper. (An elder during a focus group discussion)

Although we were unable to ascertain the extent to which approval by community leaders follows critical examination of the proposed research, as reported by other studies,[23] the results of our study suggested that community acceptance of research is not automatic.

> One of the most common questions (we ask) is, Why are you doing this? I ask for my people and they also ask. You have the right to be suspicious, so you want to be sure why they are there, what is it about, so why this research? What do you want it for? Sometimes, why this community? We do ask. (Interview with a paramount chief)

The general perception that research has potential benefits to the community seemed to be a major driving force.

> We know their work is helpful; that is why we allow them into our community. We can refuse if their work is not good, but we know their work is good. It is now over 20 years, [and] we have not seen diseases like before; that is why we have allowed them to work. But if they start being deceitful, we will not allow that. (Interview with a paramount chief)

After access is granted, the chiefs usually continue to act as gatekeepers and mediators, facilitating the flow of information between researchers and communities.

> [Chiefs] have a better way of communicating with the community than the researchers, so once they understand what your goals and objectives are, they help you in the subsequent community engagement meetings to achieve your goals. . . . Taking advantage of the structures that are already there is what makes it successful. It doesn't have to be capital-intensive or anything. (Interview with NHRC research officer)

A preferred mechanism by which chiefs in the KND facilitate this dissemination is through a durbar. A durbar is a formal community-wide gathering that includes cultural activities such as drumming and dancing and provides an opportunity for information to be shared with a large number of people simultaneously. Although durbars are thought to have originated in communal labor activities, such as the building of a new home for community members, the modern form more often functions as a space for sharing ideas and for deliberations.

> . . . [A] durbar is bringing people together, different groups of people with different interests, but then you have a theme, you have a message; so they come in, in this manner, and then the message is given. (Interview with a chief of a traditional area)

The use of familiar CE practices has benefited both the community and the researchers in several ways. First, traditional forms of engagement appear to be effective at eliciting feedback from the community, perhaps because the social organization of these meetings tends to reinforce the natural authority and special knowledge of the community.

An NHRC staff member related how his research team's encounter with community members during a durbar provided important insights into the topic of their research:

> When we went [there], what the chief told us was that he knows that sexual reproductive health is a problem. . . . But he thinks that one main issue that is causing the problem is alcoholism. So, if we were able to check alcoholism, then he is sure that teenage pregnancies will drop, the pregnancy rate will drop and [sexually transmitted infections] and the rest will drop. . . . So even by engaging with them, we were able to find out the factors of problems of the adolescents. . . . There was a lot of feedback, interesting feedback, from the community even before we started the intervention. (Interview with NHRC research officer)

This type of dialogue with the community offers opportunities for deliberation that can shape researchers' views about how to design and conduct their research.

> They have a sense of ownership, they feel they are part and parcel of the project because the community entry, mobilization, and the rest is not just meeting, telling whatever you want to give to them, and then that is it. It is much more than that because it involves dialoguing, discussions, inputs. They will also contribute. Let's rather do it this way. Why can't we use this person to do it? Why can't we turn it this way instead of that? (Interview with NHRC research officers)

Second, it helps to build the community's confidence in researchers by providing an established mechanism for investigators to register their intentions and plans in a way that allows the chiefs and community leaders to exercise the appropriate level of oversight, stewardship, and responsibility for their community:

> The VAST (Research Centre) people are different, and the politicians are also different. We want those who have the truth. VAST (Research Centre) people are the people with truth. (Focus group discussion with a chief and elders)

Third, by helping to ensure that the appropriate target community is approached, the use of traditional gatherings increases the likelihood of the presence of a critical mass of community members.

> Since it is about health, people will have questions to ask. So if you give us about 4 to 5 days, a very big crowd will come. (Interview with a chief of a traditional area)

Fourth, large traditional gatherings such as durbars are open to men, women, and children alike. This makes them particularly important for women in the Kassena-Nankana district, who have traditionally been excluded from formal decision-making processes in the community. Finally, engaging communities in the "well structured and serial manner" (Interview with NHRC research officer) that these traditions require, including the large gatherings that bring the entire community together, may help to increase the likelihood that the community will embrace the research projects.

> If you don't get them involved, you may in the end implement something that will be strange or something that they will not embrace at all. So it is better to get them involved to be able to source some information from them, to be able to get their view about the project to move to the next stage, because they always have important contributions to make to the project, to improve on what you have. (Interview with NHRC research officer)

Concretizing Confidence Through Benefits

In many cases, communities must place their trust in researchers' intentions without a great deal of evidence of the hoped-for outcomes. Our data suggest that the provision of tangible benefits has been the key driver of the strong and stable relationship between the community and the NHRC. Community members often spoke of those benefits spontaneously as their first response to questions about the NHRC presence in the community. These benefits were highly valued by local communities and appeared to have helped to secure and sustain the acceptance of the research enterprise in the Kassena-Nankana district.

Because the NHRC's mandate is partly focused on addressing local communities' limited access to basic health services, many of the benefits it provides are health-related. For instance, in the context of research protocols, the NHRC has trained local birth attendants, has brought nurses into the community as part of their family planning initiative, has increased the number of doctors available to treat a wide range of conditions, and has regularly provided transportation to the nearest hospital for those requiring care that cannot be provided locally. This attention to well-understood common needs within the community has helped to build the community's confidence in the research endeavor.

> They bring vehicles here to carry our women and their children to [hospital] and back every day. What is more than this?" (An elder, during a focus group discussion)

And so local people "are very happy with what [the NHRC has] done" (Chief's elder, during a focus group). As a result of these initiatives, there has been a dramatic reduction in morbidity and mortality associated with childbirth, malaria, measles, and a host of other diseases. Our findings make it clear that lower morbidity and mortality lie at the core of the local communities' confidence in the NHRC and its affiliated researchers. For example, the chiefs and their elders expressed their gratitude for the reduced disease burden faced by women:

> Those days. . .we lost our women and their unborn children during childbirth. . . . Now they have brought so many things here which save our women. (Discussant, during a focus group with chiefs and elders)

Health benefits, however, are not the only type of benefits brought through the work of the NHRC. The Center has provided other forms of practical assistance, for instance, by helping the community to establish a means of tracking births and obtaining birth certificates, something that was not done previously. Although a departure from traditional cultural practices, obtaining official papers in a globalized world is increasingly beneficial to local populations.

The Center has also initiated income-generating and educational opportunities. These have enhanced the existing social and economic infrastructure and have reduced the outflow of educated young people from the community. For example, the NHRC has introduced a

> . . . livelihood component that is trying to address the poverty situation of the people that we are engaging. Our peer educators are our primary target, so we train them on income-generating activities, bee keeping, which they use. . . to supplement whatever they get at the end of the day. (Interview with NHRC research officer)

Similarly, "the program also assisted the women to get micro credit from other organizations" (Interview with female social scientist, NHRC). Moreover, whereas before "there was very little employment, [resulting in] a lot of young people coming out from secondary schools looking for jobs" (Interview with external researcher) and ultimately migrating out of the community, the NHRC has been able

> to keep some of these people from going off down South, [which is] seen as a very positive thing both by the administration and also the paramount chiefs. (Interview with external researcher)

In so doing, the NHRC "became the biggest employer [and] people around Navrongo were very pleased that we were there and wanted the place to thrive" (Interview with external researcher). Clearly these employment opportunities and capacity-building initiatives, alongside the health benefits, were instrumental to the success of CE in Navrongo and have helped to sustain the long-term relationship established

between the NHRC and the community. Overall, the range of benefits that has arisen from the NHRC's activities appears to have established the NHRC as a symbol of progress within the community.

Limitations of Traditional Engagement Processes

Use of the traditional Kassena and Nankani lines of communication as part of the CE process brings its own logistical and efficiency challenges. At the logistical level, following local protocols requires planning, flexibility, and funding. For example, organizing large-scale meetings with paramount chiefs and communities (durbars) requires that the event be scheduled ahead of time.

> Time is such a big constraint because sometimes you go to inform the chief and he says, "Come back in 2 or 3 days." So you need to actually plan your activities in [such] a way that if the study is 3 months, you need to add about a month just to complete the community process. (Interview with NHRC social scientist)

The weather or other social events may force durbars and other meetings to be postponed. In any case, catering for large events, transportation, and general arrangements all come at a cost. For this reason, research teams must carefully plan and budget for CE activities and be prepared to show adequate flexibility. As well, dissemination of information through traditional channels may not always work effectively when research activities cross jurisdictional boundaries:

> If you talk to one paramount chief, then he looks at it as if it is only concerning his area so he does not pass it on to the other paramount chiefs. (Interview with NHRC field coordinator)

Moreover, the ability of researchers to enter the community through traditional processes can be hindered in cases where functional and legitimate authorities are contested. In places where local chiefs are not popular, a traditional approach to community entry is liable to trigger or entangle external researchers in conflict.

> It has happened before. This chief was there but people did not cooperate with him. The items they sent for the nurse's compound to be built were stolen because nobody took care of them. There was a chief, but every time they called for a durbar, nobody bothered. (Interview with NHRC research officer)

In such cases, research participants suggested that it is important to be open with the chiefs and to try to understand the local situation well enough that "you actually do not do things that may bring conflict or ruin the smooth running of the project" (Interview with NHRC social scientist).

Ensuring that research participants have an adequate understanding of a study's objectives is a challenge in any setting.[29] In this case, the difficulty is compounded by low education, high illiteracy rates, and the absence of Western modern scientific concepts from the community's general realm of experience.

> . . . [T]his is a very good community engagement process because it allows us to have a clear, close contact with the community, [but] it's not effectively developed to incorporate modern research. We still have lots of work to do on the best practices of how to engage communities on highly scientific research that has objectives downstream. (Interview with NHRC research officer)

Lack of gender equality can also present challenges for researchers attempting to engage with the communities in the Kassena-Nankana district. Even after 2 decades of experience, the NHRC still has to explicitly request that women be present each time researchers call for a community meeting. We encountered this issue during the conduct of this study:

> You did not say women should also be here. If you had told us, you would have seen them. (Discussant, during a focus group with chiefs and elders)

As a female respondent later explained,

> Women are usually not present; it is only when the chief asks us to be present that women will go. If he does not say so, women will not be there. (Discussant, during a focus group with women)

Many interviewees, including women, did not consider their absence at some community meetings as a sign of disrespect but simply a reflection of the traditional designation of public spaces as the sphere of men and the home as the sphere of women. Although women generally felt that they were permitted to make contributions at durbars,

> You can say it; if it is not good for you, you can say it, and you can also say it if it is something that is good for you. (Discussant in focus group discussions with women)

we observed that most of them did not contribute much to the discussions.

> Some of the women still find it difficult to talk in the presence of men (at the durbars). But if you organize the women alone, especially if it is anything that is going to affect the women, if you organize them alone, they will see it as they alone, they will not have any fears of "oh, there is a man and I will be restricted for what I say." (Interview with a field coordinator)

These traditional separations mean that researchers entering the communities must be proactive about the inclusion of women in their CE activities. Despite these manifestations of gender inequality, the NHRC's emphasis on health issues seems to be providing an opportunity to increase the recognition of women in the Kassena-Nankana district:

> The women's groups, we have our leaders, and our chief knows them. He usually calls them and tells them that they want us at a certain place on a certain day. (Discussant, during a focus group with women)

> We know women now have powers, and when they are enlightened, they help a lot. So we invite them when VAST workers come to talk to us. (Discussant, during a focus group with elders and chiefs)

However, enthusiasm about women's empowerment through health initiatives that emphasize their caring function can also subtly reinforce their traditional social roles and increase their burden, as was hinted at by one respondent:

> When there is a health talk, women are invited to attend because it is women who take care of children. (Discussant, during a focus group with chiefs and elders)

> It is women who handle children; so it is our responsibility to meet the VAST (Research Centre) people when they come to our

communities. (Discussant during a focus group discussion with women)

Researchers working closely with women may experience these cultural tensions directly:

> In some of your work, your workers come to our wives and ask them certain questions which are not proper. They ask how many husbands a woman has ever married before this present husband, how many children a woman had in the previous marriages. We don't do that. The man should sit there before they do that. There are certain things the woman should not talk about. According to our culture, it is the man who is the head of the compound. There are things you should rather ask the man. (Discussant, during a focus group with elders and chiefs)

It seems clear from our findings that a gradual change is occurring in gender relations in the Kassena-Nankana district. It seems equally clear that CE related to the research at the NHRC has played a role both in highlighting the importance of the perspective of women and in pushing the boundaries of social convention about gender equity.

DISCUSSION

The NHRC has successfully blended traditional community practices with modern research practices and has provided many tangible benefits for the Kassena and Nankani communities of northern Ghana over the past 2 decades. As a result, the local communities have developed confidence in the NHRC and its foreign collaborators. Our findings suggest that specific, preexisting features of the community greatly facilitated CE. These include clear channels of authority, progressive layers of accountability, processes for assembling the community, and processes for deliberating new ideas and proposals.

We argue that 3 main and distinct features of the NHRC's model have promoted the effectiveness of CE. First, the collective experience of the NHRC's CE activities through many research projects over the years has ensured that investigators seeking entry into the community have a social map that provides them with a general orientation to the local social hierarchy and the specific channels of authority that they must pursue. Because the NHRC was set up in a traditional African setting, the initial need for investigators to have extensive guidance as they entered the community was particularly high. The initial social mapping exercise provided an immediate solution for the VAST investigators but has also proved to be a valuable tool over time for subsequent investigators and for the NHRC. Because the initial mapping exercise followed local customs of oral communication, rather than simply documenting the findings in written form, there is no brochure or set of materials to guide investigators. New investigators are directed to seek personal guidance to enter the community, rather than rely on their own interpretation of the social norms and practices.

Second, the use of traditional, local mechanisms of CE seems to act as a buffer against some of the key ethical violations generally associated with global health research, such as exploitation and social disruption. Involving chiefs in calling for a large-scale gathering allows them to fulfill their traditional stewardship roles as leaders and protectors of the community. Durbars and other forms of social gathering and information exchange expose the proposed research to a level of public scrutiny that may be an effective deterrent to any flagrant ethical violations. In our research, we found no specific evidence of any ethically problematic studies. Rather, there was a pervasive sense, within the community, of confidence in the NHRC and its international collaborators. Traditional mechanisms of engagement may serve to forge relationships and accountabilities between the investigators and the community that encourage high standards of ethical conduct. Although it may never be possible to avoid social disruption entirely when introducing new technologies and practices to traditional settings, building on local practices, rather than importing unfamiliar practices, may help to minimize negative impacts.

Third, the Navrongo case reflects how the flow of tangible benefits from research enhances the community's confidence in researchers. Although there has been a sustained philosophical debate about the appropriate type and levels of benefit that should be provided to host communities in low- and middle-income countries,[30,31] there has been less attention to the consequences of delivering on some of the explicit and implicit promises associated with bringing research activities into communities. A general sentiment pervades the global health research enterprise that, given the massive resources invested in research for health improvement in low- and middle-income countries, the tangible benefits for host communities have been insufficient, and unfairly so. In the case of the NHRC, the rich web of relationships that the investigators have developed with the community, the strong record of focusing on research that is responsive to pressing local health needs, the community's confidence in the researchers, and the specific characteristics of the community, including its limited size, have all contributed to the realization of tangible benefits. These include in particular clear health benefits, such as reductions in vitamin A deficiency, malaria, and maternal mortality, for the Kassena and Nankani communities.

> There are 2 things: they know the benefit through their Chief and also out of respect for the Chief they accept you. But. . . it is also a factor of history. We have been in this area for the past 15 or more years and for that matter the people know what we are worth; they know the value of the research. (Interview with NHRC researcher)

> The health work that has been done here, and we are happy about it, is that measles used to worry us, chicken pox used to worry us. All these have gone away. Pregnant women and delivery of children and everyone is now happy. We now sleep. We are happy about your work. (Discussant, during focus group with Chiefs)

Our findings also raise a number of questions that will require further investigation. For example, we were struck by the fact that the chiefs and elders do not seem to

exercise their recognized authority to prevent access to the communities by investigators whose research or demeanor they find offensive. The chiefs shared only 1 specific example of conduct that they found troubling:

> There was someone who was writing a thesis, then she came round wanting to know the effects of slavery in the northwest and the west of this district, the villages around, especially around the river basin, the Sisili river. So all these have been done. She has gone away and the people ask me, "what about that lady, what has she said?" When she came, like you are doing, she took pictures, they gave oral audience, she took some pictures. So you see that they have the right to know what has happened. So feedback could be in a meeting form or they come back like the durbar you talked about and say, "can you remember we came here on this day... and this is what we found, or this is what we have gotten into." It is enough; then they are satisfied. So feedback is very important. (Interview with a paramount chief).

The failure to return results to the community occurs after approval has been given for the research. It is likely that, like Western research ethics committees, the chiefs give their blessing for studies in advance, but are relatively helpless to intervene once the research is in progress or complete. This specific instance also suggests a broader issue with respect to the chiefs' ability to make reasoned judgments about the potential value of proposed research projects for the community. In fact, it is very likely that the chiefs' approval for a study to begin serves a critical symbolic and cultural role in demonstrating their sovereignty over the community and the land to the foreign researchers, but the NHRC's scientific expertise and track record in forging collaborations, which have brought many tangible health improvements to the community, are deferred to in terms of whether any given study is worth pursuing. Further investigation of this relationship could hold important insights about the precise meaning of community consent in traditional settings.

Discussions about exploitation in research in developing countries have emphasized the importance of a fair distribution of benefits between researchers and research participants and their communities. However, it may also be that the incorporation into CE practices of traditional rituals of greeting and respect for authority and power structures in the host community play an important role in shaping expectations about what practices are considered fair. Although the specific pathways are not elucidated by our study, the NHRC experience seems unusually devoid of the common stories of exploitation, and further investigation of the reasons for this might prove to be valuable.

During the first 20 years of the NHRC, the research has contributed directly to a number of significant health improvements for the community, such as the introduction of vitamin A supplementation. It is quite unusual for research findings to have such a rapid and profound impact on a host community's health, and it is not surprising, as a result, that we found such welcoming attitudes to research. We expect that the opportunities for relatively simple but high impact studies—the "low-hanging fruit"—will diminish over time, and the research conducted in the community will settle into the more common mode of slow incremental gains over time. This change in the rate of dramatic improvements may alter the general risk-benefit calculus for accepting studies within the community. However, given the persistent concerns about exploitation in research in traditional settings, the rationales and motivations of the chiefs and elders deserve further investigation.

Limitations

We identified several issues or concepts during our data collection and analysis that, in retrospect, would have benefitted from more detailed examination. For example, the chiefs' role in scrutinizing studies and refusing those that they view as unethical has not been adequately explained by our findings. The relationship between research ethics review and CE practices did not emerge as a major issue in our interviews, but is likely to be important, particularly with respect to the way the chiefs exercise their authority. As well, our understanding of the impact of the community entry process on the subsequent design and implementation decisions made by researchers is underdeveloped. We feel our study has helped to frame the significance of these issues, and several others, and we plan to pursue these questions in subsequent studies.

Our study also has several specific limitations. First, because this was a retrospective case study, many of the experiences of the NHRC are now many years old, which may have resulted in inaccurate recall or judgment that was biased by more recent events. Second, we did not elicit the perspective of the youth of KND specifically. It is conceivable that their perspective would have revealed important trends or practices that are not well understood by their parents or elders. Third, the interviews were conducted by local people who were affiliated with the NHRC. Although this greatly enhanced the feasibility of this case study, it also could have limited the full range of issues and experiences that the respondents were willing to share with us.

Conclusions

Despite these limitations, we believe that we can draw 4 main conclusions from our findings. First, some exercise in identifying and understanding the implications of the structure of local authorities and decision-making processes—in this case, the exercise of social mapping—provides valuable guidance for outsider researchers and helps to formalize the communities' authority. Second, using traditional CE mechanisms that are familiar to the community limits the social disruption associated with research conducted by outsiders. Third, the community's confidence in researchers is enhanced when tangible benefits flow from the research back to the community, and this dynamic makes communities generally receptive to new research activities. Fourth, even in seemingly ideal, small, and homogeneous communities,

cultural issues such as gender inequities exist that may not be addressed effectively by traditional practices alone. ■

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Contributors

P.O. Tindana, S.V.S. Bandewar, and J.V. Lavery originated the study as part of the larger international community engagement research initiative of the Ethical, Social, Cultural (ESC) Program for the Grand Challenges in Global Health initiative. P.O. Tindana conducted the data collection, preliminary data analysis during the data collection phase, and initial coding. R.F. Boulanger, S.V.S. Bandewar, and P. Kolopack were involved in analysis and critical deliberation of the initial coding. L. Rozmovits conducted a separate analysis of the primary data to be compared with the analysis conducted by the team. P.O. Tindana and R.F. Boulanger drafted the initial articles and were involved in revising and editing the same. P.O. Tindana also worked closely with R.A. Aborigo during the community entry process, data collection phase, especially the focus group discussions with the chiefs. A.V.O. Hodgson provided analytic feedback and input during the data analysis and initial drafting of the article. J.V. Lavery supervised all aspects of the study implementation and participated in the detailed analysis, drafting, and editing of the final article. All authors helped to conceptualize ideas, interpret findings, and review drafts of the article.

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This study was approved by the Research Ethics Board of the University of Toronto, Toronto, and the institutional review board of the Navrongo Health Research Centre, Navrongo, Ghana.

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