Collaboration between community-based health workers and health facilities in a region of The Gambia: a qualitative study

Deirdre Wholly

A thesis
submitted in partial fulfillment of the requirement for the degree of

Master of Public Health

University of Washington
2018

Committee:
Joseph Babigumira
Todd Edwards
Julie Balen

Program Authorized to Offer Degree:
Department of Global Health

University of Washington

Abstract

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Deirdre Wholly

Chair of the Supervisory Committee:

Joseph Babigumira

Department of Global Health

Collaboration between community-based health workers and health facilities is important for patient care and for addressing the health needs of communities. This study aimed to explore the extent and nature of the interactions between health workers posted at health facilities and those based within communities in a selected setting of the North Bank East Region, The Gambia, in order to inform design of a malaria control trial in the region and contribute to global research on strengthening community health worker programs and their connection to the health system. We conducted a qualitative study in the North Bank East region of The Gambia, which included 24 semi-structured interviews with Village Health Workers (VHWs), Community Health Nurses (CHNs), and health facility nurses. Respondents were asked about roles and responsibilities, referral, follow-up, supervision, trainings, and support, monitoring and accountability, and challenges to their work. Interviews were audio-recorded, transcribed, coded, and analyzed thematically. A number of factors were found to be important in influencing the collaboration between community-based health workers and health facilities. Community-based CHNs serve an intermediary role and provide support to both the VHWs and the health facilities; however, we found a significant disconnect between VHWs and health facilities that was not sufficiently bridged by the CHNs. This disconnect may be partly a result of limited opportunities for VHWs and health facility staff to interact; a gap that is further reinforced by undervaluation of the VHW's role and contribution in the health system. External pressures and funding mechanisms limit local and regional agency, which our findings suggest is an underlying factor that de-incentivizes collaboration beyond what is needed to fulfill tasks relate to specific indicators. The results of this study suggest the need for interventions – such as the trial this study was a part of – and the regional/national health system more generally, to find ways of integrating, and strengthening referral and feedback systems, between VHWs and health facilities. This would result in increased opportunities for all health facility staff to interact, greater local and regional agency to make decisions and, ultimately, stronger health systems that are better able to provide care.

Background

Following the Declaration of Alma Ata in 1978, which called to implement primary health care (PHC) as a strategy towards attaining health for all, many countries around the globe developed community health worker (CHW) programs [1]. While CHWs in different countries were called by different names and provided a variety of preventative and curative services, an interregional WHO conference in 1986 crafted a broad and inclusive description of CHWs as "members of the communities where they work, selected by the communities, answerable to the communities for their activities, supported by the health system but not necessarily a part of its organization, and having shorter training than professional workers" [2]. Conceptualized not only as health educators and providers, CHWs were intended to be "functioning as a community mouthpiece to fight against inequities and advocate community rights and needs to government structures" [3].

Despite the enthusiasm around the Alma Ata Declaration and the sense of a shared vision and approach, many governments and agencies viewed this concept of PHC as idealistic and unrealistic. They advocated for a more focused approach targeting reachable goals using cost effective programs. Termed "selective PHC," the vision of the Alma Ata Declaration shifted into one where CHWs were used within vertical programs (p.3) [4]. Many CHW programs were designed as appendages to the health system and as a result were separate from local health services and had little support; CHWs were serving as extension agents rather than advocates [5], [6].

Throughout various shifts in global health policies and approaches, underpinned by broader changes in normative views of development, CHW programs have remained key in addressing the goal of Universal Health Coverage (UHC) in the face of immense human resources shortages in the health system across countries of the Global South [3]. In recent years there has been a renewed focus, in academia and policy and practice, on the role of the CHW as a bridge between the community and the health system [7], [8]. Several studies have focused on examining how CHWs navigate their roles as intermediaries, and on factors that support CHW performance, including supervision, program design, incentives, relationships, trust, and power dynamics. One of the key themes across many of these studies is the need for improved strategies for community and health system support of CHWs [7], [9]–[11]. From an analysis of several studies on CHW programs, Naimoli et al. argue that "collaborative supervision and constructive feedback" and "a practical monitoring system incorporating data from communities and the health system" are essential to supporting CHWs and their role in the health system (p. 4) [11].

The Gambia, a country of less than 2 million people on the coast of West Africa, adopted a PHC approach following the Alma Ata Declaration, and established the Village Health Services (VHS) in the early 1980's. The VHS is composed of community-selected village health workers (VHWs) and traditional birth attendants (TBAs) supervised by trained Community Health Nurses (CHNs). VHWs refer cases beyond their capacity to health posts and minor health centers, which provide the majority of basic health services [12]. The Gambia's health system situates management and supervision of VHWs and TBAs outside of the health facilities, and with CHNs, who are formally trained at the School for Community Health Nursing and posted to communities [13]. The current National Health Policy states that "the development of the VHS has been in isolation to

the [Basic Health Services at minor health facilities]," and calls for improved linkages between them (p. 28) [12].

The cluster randomized trial for reactive household-based self-administered treatment against residual malaria transmission (RHOST), is a complex intervention for malaria control, conducted in The Gambia, spanning both the VHS and the health facilities, and relying on participation and coordination between them. The RHOST study was conducted by a multidisciplinary team, divided into specific Work Packages (WPs), and included a phase of formative research within which this study was embedded.

Fieldwork was undertaken, as part of the formative health systems research for RHOST, in the rural North Bank East Region of The Gambia (Figure 1), to explore the extent and nature of the pre-trial interactions between health workers posted at health facilities and those based within communities. The specific aims were: (1) to define the roles of VHWs and CHNs (2) describe the interactions and relationships between the different actors at the VHS and health facilities, and (3) assess the current challenges and opportunities for collaboration between the VHS and the facilities. The overall goal of the study was to help inform the design of RHOST, guide assessment of it's impact upon the health system, and also to contribute to global research on supporting and strengthening community health worker programs and their connection to health system.

Methods

We used qualitative data collection methods to explore perceptions of different cadres of health workers. As the study was conducted under the larger RHOST framework, and interviews were designed to also ask health workers about their perceptions of RHOST, participants were limited to those living in study communities or working within the RHOST study region (Figure 1). These health workers included VHWs, CHNs, and health facility staff. Given the relatively small number of health workers that fit these criteria, all VHWs, CHNs, and nurses at health posts, and the in-charge nurse from each larger health facility in the study region were invited to interview.

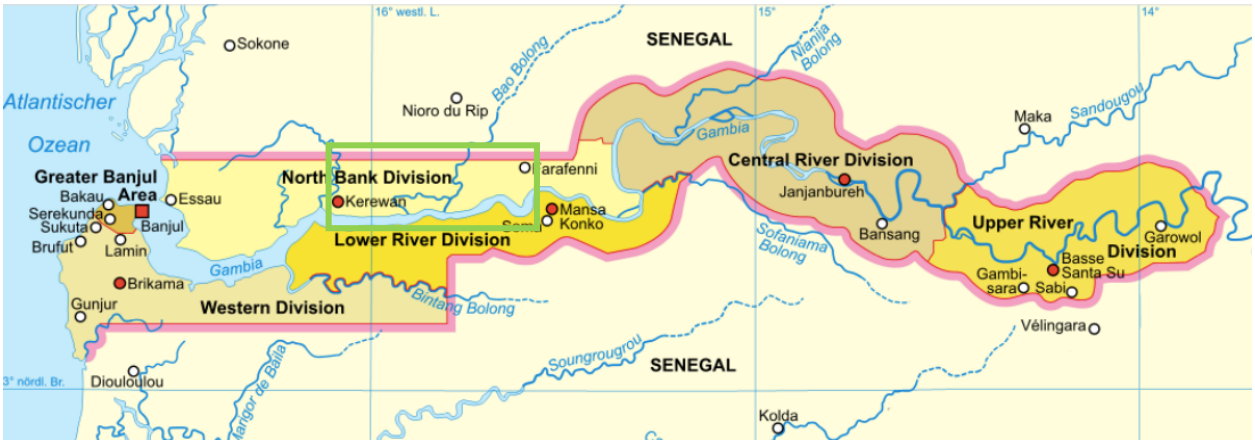

Figure 1. Study region located in the North Bank East Region of The Gambia. Map [13].

Following ethical approval of the RHOST study and the Health Systems WP from The Gambia Government/MRC Joint Ethics Research Committee, and from the University of Washington Human Subjects Division (Appendix 1), the first author (DW) gained permission from the acting Director of Health Services to approach the Regional Health Team (RHT) Directorate in the North Bank Region of the Gambia. She then approached the RHT to discuss the research, including the possibility of interviewing selected health facility staff, CHNs, and VHWs in the study region. The RHT provided phone numbers of most of the CHNs and health facility staff; VHW phone numbers were provided by the RHOST Social Sciences WP team, who had already interacted with the VHWs as a part of their exploratory research.

The demographic data collected from participants were: gender, place of work and number of years in current position.

Sampling included up to two nurses from each health facility in the region, all CHNs in the study region, and all VHWs in study villages that had a village health worker. All individuals who were invited to an interview agreed to participate, and most participants were asked at least one day in advance. Interviews were conducted face to face in participants' workplaces or homes. Interviews with CHNs and nurses were conducted in English, and those with VHWs were conducted in a local language with the help of a translator (fieldworker), and audio recorded. DW is also conversant in one of the local languages, which aided rapport building and communication. A semi-structured interview guide was developed and slightly adjusted for each cadre of health worker; the guide included questions about the health worker's role, patient load, supervision, resources, and their relationship with other levels of the health system (whether the Village Health Service (VHS), the health facility, or the RHT). A total of 24 interviews were conducted, including 8 nurses, 6 CHNs, and 8 VHWs (2 of the individuals were interviewed twice; an opportunity for a second interview with them was available and helped to further explore emerging themes). Each interview lasted between 30 and 90 minutes.

All 24 interviews were transcribed by DW. For interviews conducted in English, the entire interview was transcribed. For interviews that were conducted in a local language, the interviewer's questions (in English) and the field worker's translations (into English) of the interviewees' responses were transcribed.

Data was analyzed by DW according to principles of thematic analysis [14], first reading through all of the transcribed interviews and identifying broad themes of interest in the data. Using these broad themes of interest as a guide, DW and a colleague involved in the RHOST health systems WP independently read and coded two transcripts with NVivo (v.11) software, identifying specific themes from the data that addressed the broader categories. To assess and correct for inter-coder reliability, coding for specific themes was compared, with a few minor discrepancies discussed, and finally a shared code of definitions agreed on. From there, DW compiled the specific themes into a working code book and then coded the rest of the data, adding and adjusting codes as appropriate throughout the process. After the first round of coding, following the steps of thematic analysis, DW continued to adjust, add, and merge codes whilst exploring emerging patterns and key themes before arriving at a final thematic structure.

Results

Sample Characteristics

DW interviewed 8 VHWs, 6 CHNs, and 8 health facility nurses or assistant nurses. All of the VHWs were male; all were based in communities without health facilities, and their years of service ranged from 3 years to 35 years, with the majority having served for at least 14 years. Five of the CHNs were male, and one was female; they had been working in their postings between 1 month and 4 years. Among the health facility nurses and assistants, five were male and three were female. Most had been at their posts between 2 and 7 years.

The results are presented in three sections. First, around the roles and responsibilities of the VHWs and CHNs as they reported them, and the challenges they faced in fulfilling their roles. Second, around the interactions and relationships between the VHWs, CHNs, and the health facilities, and thirdly, around different factors, including decision making, RHT supervision, and human resource challenges, that were seen to impact collaboration between the the three types of health systems actors.

I used the following scale to indicate the strength of the findings (in addition to the number of health workers out of the total).

- All (100% of participants)
- Most (85% to <100% of participants)
- Many (50% to <85% of participants)
- Some (35% to <50% of participants)
- A few/A couple (<35% of participants)

Roles within the Village Health Services (VHS)

VHW as the "focal person" for health

Many of the VHWs and CHNs (8 out of 14) described the VHWs as the "focal person" for health in the community. The VHWs had similar explanations of what it means to be the focal person for health.

> "Any health issues that come to the village, I will be the first person to be contacted. So any health programs that come to the village, they will turn to me. They must first come to me, and they work with me." (VHW 6)

Many VHWs (5 out of 8) also talked about their role in disseminating health information from visitors or from attendance at trainings or workshops to the community. While only one CHN mentioned the role of VHWs in health education, some CHNs (3 out of 6) did talk about the role of VHWs as messengers and organizers. In addition to health information, VHWs are asked to share with their communities such things as upcoming vaccination campaigns and nutritional surveillance, and help sensitize the community for these events.

Most VHWs and CHNs (13 out of 14) also described how VHWs have an important role in identifying and notifying the CHN about sick individuals in the community, such as suspected TB cases and malnourished children, and instances of poor environmental health and sanitation practices.

> "We cannot be seeing everything or knowing everything that is in the community, so they are the ones standing there for us." (CHN 2)

Because they live in the community, VHWs are also well suited to regularly supervise targeted patients. Many VHWs (5 out of 8) mentioned follow-up as a part of their workload. For TB patients they supervise their treatment schedule, and for malnourished children they regularly visit the families to make sure they are properly using the supplementary food, and measure the progress of the child.

> "I went with [the VHW], yeah, I went to screen the children on [acute malnutrition]. We went together, and after that I also assigned him to also come back and check on them." (CHN 6)

VHW as provider

As the focal persons for health in the community, VHWs are also the closest point of care for the communities they are in. All of the VHWs reported seeing patients most days; most VHWs (7 out of 8) said they see between 1 and 5 patients daily. The VHWs all reported that when a patient is beyond their ability to treat or they do not have the appropriate medication, they refer the patient to the health facility.

Some (3 out of 8) VHWs expressed that seeing patients is the most challenging part of their job, because it can disrupt their other work.

> "Its not easy to be a servant in a community, especially on the side of treatment. Because sometimes you know you'll be getting ready for the farm, patients will be coming up, we have to delay the time, so it requires patience." (VHW 3)

VHWs are supplied by the RHT with basic medical materials – paracetamol, RDTs for malaria, Coartem (malaria treatment), condoms, sometimes oral rehydration salts (ORS) and supplies for dressing wounds, and reportedly Septrin (antibiotic) in the past. Most of the CHNs and VHWs (13 out of 14) reported that in recent years there have been inconsistencies in the supply of medicines and medical materials. Many (9 out of 14) mentioned gaps in RDTs and Coartem supply, and some CHNs and VHWs (6 out of 14) talked about how VHWs received more supplies in the past.

> "We used to have a lot of supplies, but I don't know why they are not coming. Is it that there are not enough drugs at the facility, or I don't know." (VHW 5)

The inconsistency in medicines and supplies at the VHW level can impact care seeking decisions in the community. Some VHWs and CHNs (5 out of 14) said that most people in the community go to the VHW first, before going to the health facility. But many of the VHWs and CHNs (7 out of 14) reported that while some people visit the VHW first, many bypass them for the health facility. Some of the VHWs and CHNs (5 out of 14) suggested that the reason people are bypassing the VHW for the facility is a result of actual, or perceived, shortages of medicine.

> "Sometimes people used to come to me but medication is my problem I don't have enough. Yes, here sometimes if a patient comes to you one or two occasions and couldn't find anything here it could discourage them. Even if you have stocks before they realize they may be going elsewhere for their drugs." (VHW 8)

Trust in the VHW

There were mixed perceptions around community trust in VHWs. Many of the VHWs and CHNs (7 out of 14) argued that the VHWs are trusted by their communities; they are from the community, have been working for a long time, and are trusted as health care workers.

> "The village heath worker know[s] the patient more than I do. So because they live and stay together, he knows the patient more than I do, maybe he has his own way of convincing the patient that I cannot do it." (CHN 2)

A few VHWs and CHNs (3 out of 14) reported that because of community trust in VHWs, the presence of the VHW at certain health programs can serve as an endorsement of that program; one VHW described how his role in any program or intervention is to "give weight to [health workers'] voices" (VHW 5).

But some CHNs and nurses (5 out of 14) expressed that VHWs are not completely trusted by their communities, and that though they are often called 'village doctors,' they do not have the same credibility or influence as higher-up health workers.

> "Might be you know, like, like [the VHW] we are living in the same community. Might be if [the VHW] tested you [for malaria], might be you will not take [him] as somebody who is serious." (Nurse 2)

Community support

The initial design of the VHW program called for community support. However, though their communities should be supporting them by working in their fields, or the VDC purchasing medicines for them to sell in the community, some of the VHWs (4 out of 8) said that this has never occurred throughout their tenure in the role.

> "There are challenges, because the villagers need to support us somehow. Because it's the villagers who put us into this position. So by supporting us, they should be helping us in our farm work." (VHW 6)

Some VHWs (4 out of 8) expressed their willingness to serve despite the challenges they face, and the lack of support they receive from the communities:

> "I carry the whole burden. The village does not give any support." (VHW 8)

The VHW went on to say that they were happy to have been selected as a VHW because it is a voluntary role and they were chosen from the community.

CHN supervises and supports VHWs

Many of the CHNs (4 out of 6) described their main roles to be supervision of VHWs and TBAs and community health outreach activities; two CHNs were also overseeing a health post. Many VHWs and CHNs (8 out of 14) also reported that the CHNs visit the VHWs once or twice a month: once for data collection and once for supervision. Many of the VHWs and CHNs (8 out of 14) added that the frequency of these visits is dependent on the condition of the CHN's motorbike. CHNs rely on their motorbikes to conduct much of their work, but complain of frequent fuel shortages, old unreliable motorbikes, and delays in motorbike repairs.

> "If I didn't see him, I myself will know that [the CHN's] bike has a problem. But if the bike is good, he's always here." (VHW 2)

VHWs talked about different ways in which the CHNs support them. Some VHWs (3 out of 8) and a couple of CHNs (2 out of 6) said that the VHWs invite the CHNs to attend their village cleaning activities, and CHNs give a health talk at the end. Many VHWs (5 out of 8) also reported that the CHN answers any questions they have, and will inform them of any new information or activities coming up.

> "If he comes, if I don't know any new things coming up, he will inform me about it. [My CHN] is a good man, anything I have doubt on, if I ask he will put me through." (VHW 3)

Many of the CHNs (4 out of 6) talked about how they play a role in supporting the relationship between VHWs and their communities, in both directions; by working to increase community trust in and utilization of VHWs, and by working to increase the motivation of the VHWs to serve their communities.

> "We support the work of the village health workers by making the communities trust them … telling them that they are the ones who selected these VHWs, not us. So they should trust in them, anything they tell them they should be ready to do it. I think it's the most important thing we could do to help the VHWs in the community." (CHN 2)

Some CHNs (3 out of 6) also talked about providing support and back-up for the VHW; when VHWs are unable to change people's behavior around environmental sanitation, or if people are not participating in cleaning events, they can call on the CHN.

> "When I have the community set-setal [monthly cleaning day], I will inform [the CHN] to join. When he comes, participation increases because for me alone when I talk to the villagers, some will say I don't have work to do, I'm going on with my business. But with the CHN's appearance, people are encouraged to come out. That's a big support to me." (VHW 1)

Some VHWs and CHNs (5 out of 14) also mentioned that there are good personal relationships between the two levels of health workers.

> "Any time I missed [the CHN] for some times, [the CHN] will give me a call, inquire about the status in the village. So through that, you know, I know that he has a concern for the village and there is a good relationship." (VHW 2)

Data collection

When describing their visits to VHWs, all of the CHNs emphasized checking on VHW tally sheets, even when referring to a supervision visit (rather than a data collection visit). Some VHWs (4 out of 8) also emphasized data collection as a central part of CHN visits.

> "They usually come here, and when they come they pick up the records that I made, and then they collect that record and take it along." (VHW 6)

This suggests that there is a strong focus on data collection rather than other forms of supervision or support. Only one CHN reported that during a supervision visit, he once observed a VHW treating a patient (CHN 29).

CHNs fill gaps

In addition to the support they provide to VHWs, all of the CHNs who are based in the community and not also overseeing a health post (4 out of 6) talked about providing direct care to patients in the community. A couple of CHNs (2 out of 6) also reported that they sometimes visit patients in the communities while conducting supervision visits.

> "Most times when I go round I found them at the communities because they are always expecting." (CHN 6)

Many of the CHNs and nurses (9 out of 14) reported that CHNs work shifts at the health facilities when they are needed. Some of them (5 out of 14) also talked about the good communication and relationships between CHNs and nurses.

> "I have a very good relation because he is kind, and he is ready to do the work. Any time you call him you will get him … Sometimes most of the time he will in fact spend his time here, he will spend nights here so we do have a lot of things together." (Nurse 3)

Health facility efforts to serve patients

Staff at health facilities also reported on practices that increase patient access to care. Health posts officially close at 4pm and are not open on Sundays, but some nurses (4 out of 8) reported that they see patients at any time of day, any day.

> "It's very rare during the weekends that you come here you don't meet anybody … anytime if patients come to the facility and found that it's locked, you see, they lose confidence, you know … So you see the flow of patients will be reduced. But anytime when they come, they found somebody on the ground, people will come." (Nurse 4)

There is a sense that despite the challenges of being essentially on call at all times, health facility staff make the effort to serve communities and meet the expectation that the facility is always open to patients.

Interactions between the different actors in the health system

Coordination of patient care

Referral

All VHWs talked about how they refer patients to the health facility when a case is beyond their ability or when they don't have the appropriate medication. Only the VHW who has been in his role since 1981 reported using referral forms in the past, and only two VHWs (out of 8) reported sometimes calling health facility staff when they were referring patients. One nurse reported that patients coming to the facility sometimes self-report having been to the VHW:

> "People use [VHWs]. Because sometimes they will tell me, I went to our village doctor, so I am not – I don't feel better, so I said let me just go to the facility." (Nurse 3)

But a CHN who doubles as a health post staff reported the situation differently:

> "Every end of month we go to the village health workers for supervision, and they will be telling us the number of patients they refer to us here. So they are the ones recording that they referred. But not patients coming to tell us that I went to the village health worker." (CHN 2)

This suggests that there is not a clear referral system beyond an informal verbal referral by VHWs, who record the referrals as tallies on their monthly reports.

Follow-up

Some of the CHNs (3 out of 6) and nurses (3 out of 8) described how the health facilities sometime ask CHNs to visit antenatal patients who haven't completed their doses of IPTp, make postnatal visits to women, or conduct follow-ups with patients in the community for other reasons.

> "Yeah so they also gave me their defaulters in the RCH, the antenatal people who used to take Fansidar as prophylaxis, so some will not even come, some will be late booking. So I will take the records of those people with their details and visit them with my motorbike." (CHN 1)

A couple of the CHNs (2 out of 6) implied that the follow-up requests were generally tied to specific indicators for which the health facility is responsible.

> "So if [the health facilities] have SAM [severe acute malnutrition] patients and they admit them, maybe because they are sick, so when they discharge them they call us, so that we can – because they are also paid for at the facility, for the project." (CHN 6)

Links between VHWs and nurses

Though VHWs may, in the end, conduct some of these follow-ups, especially for TB patients, many nurses (6 out of 8) reported that they don't have a strong link to the VHWs, and explained that this is the role of the CHN, whose position is to be the supervisor of the VHWs and link them to the facility and health system.

> "That one is the CHN, the one at the PHC who can answer that question because they are the ones who communicate with the village health workers." (Nurse 6)

Two health workers (1 VHW and 1 nurse) reported that they communicate directly with each other about patient referral, but they seemed to be an exception. Some of the VHWs (3 out of 8) also reported that they don't work directly with the nurses, but that they have a friendly relationship.

> "I don't really work with them. If I visited them at the health center they are open to me although I don't share any work with them but when I goes there, they are open with me." (VHW 8)

Opportunities to meet and interact

Health facility meetings

The only regular meetings reported to include both health facility staff and CHNs were monthly health facility meetings. These were reported (by 6 out of 8 nurses) to take place at all three of

the minor health facilities where staff were interviewed; health post staff and CHNs under these umbrella facilities are all invited to attend the meetings, and some nurses (4 out of 8) mentioned that CHNs usually attend. The meetings were reported by many nurses (5 out of 8) to focus on health facility matters, and were described in a broadly similar way:

> "We talk about the ways forward for the facility, and then the services that we are rendering to the communities also. What do we think will help us, will allow us to achieve what we want there, related to service. And then we also talk of our constraints and our challenges there, and then our interpersonal relationships, because if we don't have a good relationship, we also discuss that. That was the agenda that we discuss." (CHN 3)

A couple of CHNs (2 out of 6) and one nurse did report that health issues in the community were also discussed during these meetings.

RCH clinics

The one regular activity that was reported to include VHWs, CHNs, and the health facility staff was the Reproductive and Child Health (RCH) clinics that occur monthly at health facilities and designated trekking sites. Some VHWs (3 out of 8) mentioned attending regularly, and some nurses (3 out of 8) reported RCH clinics to be one of the places they interact with VHWs.

> "They participate … help weigh the kids, put them on the scale. [One of the VHWs] is mostly there. And the one at [a nearby village], [another VHW] he's hardworking too. He's a village health worker too. He helps." (Nurse 1)

While one of the nurses and one CHN talked about the importance of RCH clinics for discussing health issues with the community, none of the health workers reported any involvement of the VHWs in the health talks given to the women attending. This seems to reflect, as discussed early, more of a focus on the organizational and logistical support role of the VHW over their health promotion role.

Regional and national factors impacting collaboration among health system actors

Several factors related to management at regional and national levels of the health system were seen to impact the collaboration between the different levels of the health system.

Information sharing and decision making

Some CHNs (3 out of 6) and nurses (4 out of 8) reported that monthly data from the facilities and the VHS is collected and reported separately to the RHD; health facility staff don't generally see VHS data, and vice versa.

A couple of health workers (1 CHN and 1 nurse) described how local health data is sent upwards, through the RHD and to the central (national) level, and suggested that decision-making power lay at the national level.

> "If you collect the data we will send it to the RHT. So the RHT also will send it to national level. So people at the national level will look at this data and they will know the health problems in certain regions or even facilities. Then from that data that's where they will do their planning and come up with projects or health interventions for particular places." (Nurse 8)

One nurse gave an example of an instance where the RHT responded to local increases in a particular disease by asking CHNs and health facility staff to conduct sensitizations, but added:

> "Bringing in health intervention to counter the cases, that has not been done. We've just been doing the routine activity that we've been doing." (Nurse 8)

A couple of CHNs (2 out of 6) did report that their monthly in-service meetings at the RHD are an opportunity to discuss what they're seeing in the communities:

> "They have asked why you have that number of malnourished kids in your area, then you will start explaining maybe diarrhea cases or some other problems, but it has to be a larger discussion." (CHN 5)

But one CHN also reported that the responsibility of doing something with the data discussed in meetings largely rests on the initiative of the individual health worker.

> "After the meeting, if you want to utilize your information that you reported, if you want to go and work on it, if you want you just work on it next time so they don't blame you. So the ball is in your court." (CHN 6)

External/vertical funding and trainings

A couple of VHWs (2 out of 8), a nurse (1 out of 8) and a CHN (1 out of 6) reported that decisions around training for health workers are made at a higher level, and are not necessarily aligned with the health needs in the community.

> "I cannot decide [what trainings I should have] for myself because we are not well educated we only rely on our supervisor so at anytime they give us a training, the door is open for us to go." (VHW 3)

Whether this is a reflection of the health system organizational structure or of its culture – or indeed broader societal patterns – it suggests that local health workers have limited agency to advocate for the health training or services that they feel are required to meet the needs of the communities they live and work in. Additionally, there seems to be a strong focus on trainings

aligned with external funding priorities; most VHWs (7 out of 8) and a couple of CHNs (2 out of 6) reported that, at least in the past few years, most of the VHW trainings focused on malaria or TB.

> "I think training them of RDT tests and so is more frequent than training them of village health worker at all. At the village heath worker level." (CHN 2)

RHT supervision

A couple of the CHNs (2 out of 6) mentioned that the RHT often bypasses CHNs during field visits, and goes directly to the VHW, where they consult the VHW's visitors book. A couple of VHWs (2 out of 8) also mentioned that when the CHN visits the VHW, he'll sign the visitors book even if he doesn't find the VHW there. This seems to suggest that the fact and frequency of the visit is more important to their supervisors than the content or quality of interaction.

> "So for example, if you don't visit a village health worker for a month or two, if the RHT goes there, the first thing they will do is the visitors book, they have to look for that and if they see that you are not coming there for a while from there they will come to you." (CHN 5)

Some CHNs (3 out of 6) and a VHW reported on changes in policy around VHW medical supplies. Previously, the CHNs would pick up medical supplies from the RHD and deliver them to the VHWs.

> "But now they changed the system also. Instead of me taking it from the store here to the village health worker, now it's the village health workers who has to come here." (CHN 3)

One CHN explained his understanding of the reason behind the policy change:

> "These stories came up that some do not give out the village health workers their medications - maybe they make it into their own personal practices and those sort of things. So that's when the RHT noticed that such things are happening, then they stopped giving.
> *And is it true, these stories?*
> It could be, not sure. At times you will be working in a village that you are not on good terms with the village health worker. So he'll be accusing you of doing such things, and all this stuffs. So who knows." (CHN 4)

Regardless of the veracity of the 'stories', these comments suggest a level of mistrust between the RHD and the CHNs, and a tendency towards top-down decision making rather than addressing problems collaboratively and involving health workers in solutions and decisions.

Human resource challenges

Additionally, all of the CHNs talked about the challenges of human resource shortages among CHNs and nurses. Some of the CHNs (3 out of 6) reported that one of the main drivers of staff shortages is continuing education and professional development; CHNs and nurses go back to school for additional medical qualifications, such as midwifery, that will lead to higher salaries.

In general, CHNs and nurses don't stay in one place for more than a few years. All of the CHNs and some of the nurses (4 out of 8) reported being in their current posting for 4 years or less; some (3 out of 6 CHNs) had been there for one year or less. A couple of nurses (2 out of 8) and one CHN said that the RHT can decide to move you any time.

> "At times, it is like if you want to go further your education, if you move somebody has to replace you. Yeah that I know of. But that frequent movement I think that is on their own side." (CHN 5)

As a result of the shortages, some CHNs (3 out of 6) were assigned to either cover more than one circuit, or to cover both a health post and a PHC circuit. One of the CHNs talked about how a change in post could be motivating because it challenges you, but another CHN also suggested that high staff turnover at the RHT may have been the reason for a recent lack of VHW bimonthly meetings.

> "We missed today almost this is the 6th month that we didn't do it yeah maybe the situation of the RHT because we have so many people who left the RHT and some new people come maybe they are not very familiar with our activity in the region as of now." (CHN 1)

Discussion

Our study found a number of important factors influencing the collaboration between community-based health workers and health facilities. Community-based CHNs serve an intermediary role and provide support to both the VHWs and the health facilities; however, there remains a disconnect between VHWs and health facilities. This may be partly a result of limited opportunities for VHWs and health facility staff to interact, and further reinforced by undervaluation of the VHW's role within the health system. External pressures and funding mechanisms limit local and regional agency, which our findings suggest is an underlying factor that de-incentivizes collaboration beyond what is needed to fulfill specific project/programme-related indicators. As such, these often fail to strengthen the health system, and may at times even contribute to weakening it.

Support from the community-based, intermediary CHN role

We found that the flexible and in-between role of the CHN allows CHNs to provide support to VHWs more frequently than is often described by CHWs whose supervisors are staff at a health facility [15]. However, CHN supervision is not necessarily of higher quality than that described in

settings where supervision is conducted by health facility staff [16]; it focuses on data collection rather than problem solving or increasing competency. Given the CHN's primary role as supervisor of VHWs and community health programs, and their separate training, we would expect that CHNs would provide higher quality supervision. It's possible that lower quality, data collection focused supervision is linked to the limited power of CHNs to respond to VHWs' expressed needs. A study on supervision found that when CHW supervisors knew that they had limited power to address problems or make decisions, they did not generally ask CHWs about their challenges, and focused on tasks such as data collection [17].

Despite these challenges, we found generally positive relationships between VHWs and CHNs. The location of CHN supervision visits – all in the community – may play a role in VHW satisfaction; other studies have also found that when CHWs receive visits from health system staff, they gain respect and credibility in the eyes of their community [15],[16]. Furthermore, the CHNs' community placement may also impact the positive relationships; Kok et al. found that CHWs in Ethiopia were frustrated with health facility supervisors who didn't fully understand their role [10] and this kind of tension was not apparent in our study.

Limited opportunities for VHW and health facility staff to interact

We found a disconnect between VHWs and health facilities in the feedback and referral systems, in meetings and dialogue, and in information sharing and decision making. The role of the CHN, though supportive to both sets of actors individually, may unintentionally serve to widen the gap between them, as it limits the need for health facility staff to interact with VHWs in any kind of supervisory, supportive, or collaborative manner. We observed several consequences that may be caused, or reinforced, by the gap between VHWs and health facility staff. Among them is limited feedback for VHWs on their referrals. Other studies have found that CHWs often feel unaware of how well (or not) they are performing [15]; providing specific and timely feedback is important for ongoing learning and motivation. Additionally, health data from VHWs and from health facilities is not shared at a local level, but reported separately to the RHT. These important elements – weak referral tracking and information sharing – mean that health facility staff don't have information on where patients first seek care, how many visit the VHWs before attending a health facility, and for what conditions, and what type or quality of care VHWs are providing at the community level. This hinders the ability of the local health system to identify and address gaps in patient care, to respond quickly in case of emergency or to adapt to ongoing longer-term change.

Undervaluation of role keeps VHWs on the periphery

Furthermore, other studies have shown that when the health facility staff do not understand the value of the work the VHWs conduct, VHWs are likely to go underutilized, un-integrated into the health system, and remain on the periphery [3]. Our findings suggest that in The Gambia, despite the years of experience that most VHWs have, working with health programs in their communities, the health system utilizes VHWs more as messengers and logistics coordinators rather than as health workers with experience and and insight, or as advocates for the

community; this has been reported in many other contexts [18], [7], [19]. Hierarchies in health systems tend to value formal medical knowledge over tacit experiential knowledge, even in settings that have demonstrated success with team-based models for PHC, such as Brazil [3], [20].

Management and funding mechanisms

We also found factors at the regional level and above that likely impact collaboration among health facilities and the VHS. Among these is the nature of RHT visits to VHWs, and decisions around distribution of supplies to VHWs, which both suggest mistrust of CHNs, and a lack of open and transparent communication between the RHT and community-based health workers in the region. Additionally, our findings indicated a perception among VHWs that data is shared upwards, and that decisions are made at higher levels of the health system and subsequently filtered down. Among CHNs, who have the opportunity to share data monthly, we found a similar perception around decision making. Despite Gambia's policy of decentralization that should give significant authority to regional health departments, the reliance on external health funding has contributed to a concentration of funding and decision making power at the central level [21], [22].

Study Limitations

The study has a few limitations. First, the data is respondent-dependent, which could have created a number of response biases, including recall bias and social desirability bias. This could be exacerbated by the positionality of the interviewer (DW) who is a young, white, American female student. However, DW was highly familiar with the local cultures and customs, having lived in the area for 2 years prior to implementing this study, in addition to having an advanced knowledge of Wolof, one of the main local languages. This in-depth knowledge and awareness of the local setting was apparent throughout the interviews and it helped reduce response bias among participants. Potential for responder bias was further minimized by interviewing VHWs, who are in the least position of power, in their own homes rather than at health facilities.

In the cases where interviewees opted to speak in a local language, DW worked with a trained interpreter who was part of the broader RHOST field staff team. Whilst some of the nuances may not have been fully interpreted, or the deeper meanings slightly lost, DW and the interpreter went through the interview guide together to ensure mutual understanding of the questions. Ideally, the interpreter would have also transcribed the questions and responses in local language, and translated them into English in order to ensure accuracy and completeness of translations; due to time constraints, this was not possible.

Another limitation is that the small sample size and purposive sampling strategy employed may have prevented the study results from being generalizable beyond the RHOST study region, the North Bank East region of The Gambia. However, given the aims and objectives of the study, and the resource (time/money) constraints involved, this was the most appropriate study design and

methodology for such work. Further research across different parts of The Gambia, and elsewhere, may confirm or refute the findings presented.

Conclusion

Despite the limitations outlined above, this study contributes to global health research on the links between CHW programs and the health system. Our findings suggest that VHWs are better supported because of CHNs, but that a disconnect between the VHWs and health facilities remains and that it is largely a result of weaknesses in the CHN's intermediary role, limited opportunities for all health system actors to interact and collaborate, and management practices that reinforce the separation between the VHS and the health facilities, fostering diminished local agency and decision making. Programmatic changes, or broader health system changes, that better connect the VHS to the health facilities should be considered, designed, implemented and evaluated. For RHOST, the complex intervention for malaria control within which this project was situated, the social sciences and health systems teams collected and considered the experiences and insight of the VHWs as part of the formative research that helped co-design the final intervention. This is an improvement on a more "traditional" trial design. However, as a further step, our findings imply that VHWs must be placed more firmly within the health system, to maximize the support they receive and to increase recognition of their value and insight. Future interventions should consider (in addition to working in the community) planning, training, or feedback meetings at facilities and include the health facility staff, CHNs, and VHWs all together, rather than (or in addition to) meeting with each cadre of health worker separately. More broadly, opportunities for improving collaboration between VHWs, CHNs, and health facilities include providing greater support and autonomy to the intermediary role of the CHN, making monthly health facility meetings more team-oriented, and using RCH clinics as opportunities to reinforce the ties between VHWs and health facility staff.

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