Perceptions and experiences on community work improvement teams: the case of community health units in Kasarani sub-county, Nairobi, Kenya

Rachel Ambalu (✉ Racobiero@gmail.com )
Amref Health Africa (H.Q)

Saul Atwa
Amref Health Africa (H.Q)

Mariam Otira
Amref Health Africa (H.Q)

Lucia Ndolo
Amref Health Africa (H.Q)

David Ojakaa
BRIM RESEARCH

Judy Macharia
County Government of Nairobi

Research Article

Keywords: Community work improvement team, Quality improvement, Community health unit, Kenya

Posted Date: November 9th, 2022

DOI: https://doi.org/10.21203/rs.3.rs-2190909/v1

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Abstract

**Background:** In Kenya, guidelines have been developed and activities undertaken aimed at improving the quality of health services in health facilities and communities. These efforts could help in contributing to the country’s goal of the highest standards of health for citizens. Current research on the subject is limited to whether the novel idea is understood and its benefits. This study takes a deep emic dive to understand the dynamics of work improvement teams (WITs) in the case of five community units within Kasarani sub-county of Nairobi City County, Kenya.

**Methods:** Focus group discussions and key informant interviews were conducted with members of WIT. Interviews were recorded and transcribed, after which analysis conducted using NVIVO software was based on inductive coding.

**Results:** Participants vividly recollect core WIT training and implementation aspects in particular the power of teamwork, the mentoring role of community health assistants (CHAs), and community innovations. Appreciation of WIT training and implementation finds expression in warmer reception accorded mothers referred by community health volunteers (CHVs); more open sharing of health concerns due to the social nearness of CHVs to community members; community own-resource contributions. Members of work improvement teams share a sense of empowerment post-training and feel triumphant after winning in WIT competitions. Experiences of WIT members include championing roles such as the CHV as the health educator, the CHA as the captain, and the chief personifying Government’s effective presence in the community. Similarly, the experience of disconnections between the community and the formal health systems is evident in respondent narratives, as are gapping (identifying health problems in the community), and discussion steps during work improvement. Enabling factors for quality improvement through community work improvement teams include passion, commitment, and self-motivation as well as team household visits. Nevertheless, hurdles within and external to mother, CHV, and facility levels persist.

**Conclusion:** Respondents present fresh recalls, appreciations, and experiences on WIT training and implementation in Kasarani sub-county. These imply WIT efforts as inflection events propelling performance of community health units. The intervention should be scaled to other community health units and regions, considering enablers and challenges.

**Background**

As a follow-up of Kenya Government policy on improving the quality of health services in health facilities as in communities, several guidelines and related resource materials have been developed. Under strategic direction four, the Kenya Community Health Strategy prioritizes [1] “strengthening the delivery of integrated comprehensive and high-quality community health services”. Key interventions include institutionalizing standard operating guidelines for the community health workforce, conduct annual community health audits, and conduct monthly quality improvement team meetings to review the quality
of community health services. The Government of Kenya also launched a standards guide [2], and a facilitators’ manual [3] Kenya Quality Model for Health provides conceptual framework for quality improvement in health services in both the health facilities and community (Ministry of Health in Kenya, 2022). Additional efforts have been made to improve the quality of services at the community level in particular the formation, training, and activities of work improvement teams (WITs) at the community level. This is a commendable effort which if vigorously implemented, could help towards attainment of the highest standards of health for every Kenyan, as aspired to in the bill of rights of Kenya’s 2010 constitution.

This study is based on the “Innovative Partnership for Universal Sustainable Healthcare” (iPUSH) programme, flagship Universal Health Coverage (UHC) project (2016–2021) by Amref Health Africa and PharmAccess Foundation. A particular intervention under iPUSH and implemented in several community health units (CHUs) in Kasarani sub-County of Nairobi City County is quality improvement of health services at the community level through work improvement teams (WITs). Kasarani is one of the poorest electoral areas in the country and in Nairobi, covering the highly populated slums of Mathare, Huruma, Kariobangi and, Korogocho. The iPUSH quality improvement (QI) initiative focussed on five community health units (CHUs) on which this case study is based in Kasarani sub-county reporting to Dandora Phase I health centre namely Block GB, Canaan, Dandora kwa Mbao, Dandora Phase II, and HDD2. A number of distinct activities and processes mark the WIT initiative in Kasarani Sub-county of Nairobi County; they show the context in which the innovation was introduced. In planning for the launch of the implementation of quality in iPUSH project-supported sites in Nairobi County, the joint Amref-County team proceeded in a number of steps. These involved initially supporting a two-day refresher training for Sub county Quality Improvement Teams (SCQITs) and community health assistants (CHAs); subsequently supporting another two-day training of WITs by SCQITs; finally having the trained WITs proceed to implementation at community level. Implementation included monthly WIT and SCQIT meetings, quarterly data quality audits (DQAs), quarterly support supervision visits, and a two-day learning and sharing event in June 2020.

The literature on quality improvement of health services relevant to the community level can be organized into Kenya-specific, that of the rest of sub-Saharan Africa, and the statistical approach to quality improvement (QI). In relation to the first theme [4] in a policy brief report following a community quality health improvement intervention, both community health volunteers (CHVs) and their supervisors - community health assistants (CHAs) – demonstrated improved comprehension of quality improvement and appreciate its relevance to their work. A linked study [5] shows that cost-effectiveness of the quality improvement intervention, as compared with the usual care treatment for antenatal and birthing mothers, was better as it resulted in improved antenatal and delivery uptake.

Beyond Kenya, a USAID report [6] concludes that community quality improvement teams, in particular those in the Determined, Resilient, Empowered. AIDS-free, Mentored, and Safe (DREAMS) intervention in Northern Uganda not only depends on prevailing systems but are equally adaptable to community environments. Tanzania [7] while observing that instances of community quality improvement are rare
and have scarce documentation, concludes that with support, community volunteers are able to use quality improvement to contribute positively to care-seeking behavior. Further studying in Tanzania [8] find that identifying higher and lower performing villages helps to highlight facilitators and barriers to community quality improvement in maternal and newborn health (MNH). These factors include support from local leaders, capacity-building, and use of local data-driven decisions.

A randomized cluster-control study in South Africa [9] concluded that mentoring of community health workers (CHWs) on continuous quality improvement (CQI) can improve interactions between mothers and CHWs at the household level. This in turn can lead to improvements in mothers’ knowledge and infant feeding practices. Similarly, using a pre- and post-intervention design [10] concludes that in Benin, setting up QITs increased the performance of CHWs and the utilization of maternal and child health (MCH) services. In Ghana the SPRING project applied the Plan-Do-Study-Act (PSDA) cycle to quality improvement at both facility and community levels in order to strengthen the capacity of health workers and community health volunteers (CHVs) in the provision of infant and young child feeding and nutrition services [11]. A conclusion of the policy brief is that the strengthening generated by building on existing QI structures at both facility and community levels, is a solid foundation for scaling to other facilities and communities.

Benneyan et al [12] argue for more application of statistical process control (SPC). This is a branch of statistics that brings together time series data and graphical methods to provide more timely understanding of the data as well as in a way that is more easily understandable to non-statisticians. The argument for SPC starts from the observations that a condition for enhancement of health care is the requirement of making modifications in processes of care and service delivery. Performance of the processes is then assessed to see if the changes are making the expected beneficial effects. However, such analysis is rendered complex by natural variation in repeated measurements even if there was no intervention. The usual statistical methods do take into account natural variation. Nevertheless, they require complication of several measurements over time, often retarding timely decision-making. Statistical process control (SPC) and its main instrument - the control chart - provide a means of better comprehending and visualization of data from efforts to improve healthcare.

Thus, current research literature on the subject particularly in Kenya is limited to documenting mostly whether implementing staff and supervisors have comprehended this novel idea and the benefits of its implementation. In the current introduction rather than scaled phase of such an intervention, one would expect a detailed documentation of its workings. This study takes a deep dive into the dynamics of the work improvement teams (WITs) in Kasarani sub-county of Nairobi - one of the areas in the city which has so far implemented quality health improvement at community level. The specific objective of this study are to document experiences and effects of implementing the work improvement teams (WITs) approach to community quality health services in community health units in Kasarani sub-county, Nairobi Kenya, in particular the perceptions and experiences of community health volunteers (CHVs) as well as the success factors and hurdles to implementing quality improvement through work improvement teams.
Methods

This qualitative study was carried out first through four focus group discussions (FGDs) interviews, two of which were with CHVs, and the other two with mothers of reproductive age. Secondly, seven key informant interviews (KIIs) were conducted with other members of the work improvement teams namely CHA, Nurse, Health Promotion Officer, Nutritionist, Sub-County Community Health Services Coordinator, Sub-County Quality Improvement Team (SCQIT) coordinator, and the chief. Data for the study were collected using FGD and KII guidelines (additional file 1) designed to adhere to standard ethical, confidentiality, and anonymity requirements. Three research assistants were engaged to undertake the qualitative interviews. They were sensitized and trained for two days during mock interviews were also held. Data were collected over a period of two days after which they were transcribed. Interviews lasted on average between 1.5 and 2.0 hours during which time was accorded for each main question and probes until participants exhausted (saturated) their contributions. The characteristics of FGD participants are shown as Table 1. Coding (to identify emerging themes) and analysis were conducted using NVIVO version 12 software.
Table 1
Characteristics of FGD participants

<table>
<thead>
<tr>
<th>Group</th>
<th>CHVs</th>
<th>WRAs (Mothers)</th>
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<tbody>
<tr>
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<td>2</td>
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<tr>
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<tr>
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<tr>
<td>Casual laborer</td>
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<td>Business</td>
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</tr>
<tr>
<td># living children</td>
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<td>2.3</td>
</tr>
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</table>

Results

Awareness on WIT training and implementation

Teamwork

In as much as CHVs participated in the training on WITs, thereafter its implementation and hence exposed, this qualitative study sought to uncover attributes of WIT training and implementation that participants recollect. Analysis of the findings on this topic, particularly from the CHVs in the FGDs and corroborated by other interviewees i.e. women of reproductive age (WRAs) and KII respondents show six
main themes. These cover the areas of teamwork, capacity-building, CHV enhancement, innovations, indicators, and support supervision. Each of these is briefly presented below. Participants in the interviews recognize that a practice in the WITs is working as a team, whether among the CHVs themselves in the community or the broader WIT which includes the various mentors, coaches as well as the administrative chief. In one FGD, the centrality of the community health assistant (CHA) in forging teamwork is hailed:

_The first key point from what we learned is that teamwork is everything. Our CHA has sometimes been giving us classes. Sometimes even when we meet together after doing our duties, we come up with strong points that have made you firm. So the biggest lesson that we learned is that teamwork helped a lot (Respondent 6, FGD 2 with CHVs)._ 

In another FGD, the immense persuasive force in a team is evident:

_We always work as a team. And when we work as one team, they see that these people are serious with what they are doing because they work as a team. They just don't have different views, we work as a team. So even the community will be serious with what they are taking from us (respondent 10, FGD 1 CHVs)._ 

**Capacity Building**

It emerges from the FGDs and KIs that a CHA who is passionate about their work as a quality improvement champion is able to rub the same enthusiasm to CHVs who are key members in the community WITs.

_But we have never gotten a trainer that has sat with us to train us. So because there is that passion, she (CHA) came and looked for people who also had passion in her unit and came together and started the journey of the quality improvement team. So we have had representations three times. The first one was supported by LVCT, the second was also for LVCT and the third was for AMREF. (respondent 1, FGD 2 with CHVs)._ 

The aspects of coaching and mentoring are evident in the capacity building of WIT members:

_We used to do representations (presentations). So when we were doing that, there were doctors who were in-charge of those areas. So they used to assess us as we continued doing the work. So, I can say they were there but they were just assessing how we were doing._

_We would come and present our work. Then they check and tell us you can improve in this area. Then we stood out like professor (respondent 1, FGD 1 with CHVs)._ 

**Enhancing Routine Chv Work**
Adding to what CHVs do in their routine community work comes out as an essence of quality improvement through WITs:

**So according to how I have understood, you have asked what it [WIT] involves?**

*I think that our job, like QI members, is to enhance the things that have been going on, but we want it to be more. Yes WRAs like 1/4 have been attending ANC clinics, but they haven't been finishing the fourth ANC. What do we do so that we are able to engage these women and educate them so that they know the importance of finishing at least 4 ANC visits (respondent 2, FGD 2 with CHVs).*

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**Innovations**

Interviews with participants in the FGDs and KIs show that creativity and innovation hold an important place in the efforts of work improvement teams. According to interview participants, particularly those in the key informant interviews, the idea of innovation among work improvement teams is based on a background which highlights the change from routine work that community health volunteers undertake. Previously, CHVs merely visited households and made referrals (for mothers and children) to the health facilities to seek for immunization or related MCH services. The problem was that the mother may sometimes opt not to go to the health facility for immunization in particular.

However, through the work improvement teams and interrogation of data on MCH services, CHVs ask themselves why or what (an important step in the effort of the WITS) might be making mothers not to go to the health facilities. The WITs then come up with a small community-led innovation which has the key facts as to why the mother is supposed to take their children for immunization.

Below are insights into the dynamics of one particular innovation in the WITs – the community chalkboard:

*We came up with an idea and created a wall, dust chalk boards, in the village in our communities. .....But now we use the chalk but it’s a talking wall. Now for the talking walls, when we identify such things, there are passersby who we deal with at home....*

*Now we write a telephone number, our CHAs telephone number.......in case you see this and this, or there is a breakout of this and this disease, please contact this number. So, it has helped us so much (respondent 5, FGD 2 with CHVs).*

The sanctity of the community “talking” board is so well respected that no one dares to write non-health matters, or indeed graffiti on it:

*And then a funny thing is that, you find that the community has embraced it. They don’t use it to write anything else. If it is health-related, then they know that this is for health.*
So when they see that anyone is coming to write anything else, they refuse. You cannot find that they have written Gor Mahia Vs Arsenal [i.e. announcing international and local football matches], (respondent 3, FGD 1 with CHVs).

**Mother And Child Health Indicators**

In the efforts of the WITs, particular emphasis is placed on the indicators recorded in the Ministry of Health (MOH) handbook 216 on mother and child health (MCH) from targets and change ideas are derived:

*There is a day that we put aside in the MOH 216. We go to the field purposely for those indicators. We go for pregnant mothers, growth monitoring, immunization, all those indicators, so, we target those households. And again, on that day, there are times that we go round with the CHA and then if we get that a child has not received MR2, but why? Why has this kid not received it? So we sit down with that mother and we talk with her and they explain to us* (respondent 2, FGD 2 with CHVs).

**Support Supervision:**

Another key area for improvement of the quality community health services through WITs, according to respondents, is supportive supervision from the sub-county and health facility levels. In the areas of ANC visits, this clearly comes out from one KII:

*Of course, from the facility to sub-county being the supervisors, we get to see the areas where we are not doing well with that 4th ANC. We give them feedback in the WITs when they are meeting and that's where we end up with a project. Several CUs were doing 4th ANC which was low. And that's what we had advised them that we have a challenge and now they started following up and especially the doctors who were linked up. The main reason being that they were starting late and if they start late, remember they were not able to put in the fourth ANC. So that is now through us sharing with the WITs (KII with SCQIT Leader).*

**Opinions On Improvements In Community Health**

**Appreciation**

Participants interviewed in the FGDs and KIIs hold a variety of opinions about improving community health services through WITs in the five areas identified. These beliefs range from appreciation to change ideas. They also include opinions on referrals, social nearness, and community contribution. Work improvement team initiators, coaches, and mentors; CHVs and women in the community appreciate improvement of health services in the community through WITs in a variety of ways. Observing that there has been a good reception amongst the community members, the sub-county community health services
coordinator (SCCHSC) opines that doing things abnormally (out of the box) as is expected in quality improvement has seen the WITs achieve change, in addition to the positive reception from the community.

For the SCQIT lead however, the quality improvement and WIT initiatives at the community level, as compared with the facility unit, form an important standpoint for appreciation.

_I really appreciate the efforts done from the community because that is where we have the people. In the facilities we wait for them when they come and if they don't come, what happens? The WITs have now to go down, talk to them to bring their children for immunization. The ones who have never started the full doses, the ones who started and defaulted, they are able to go back as a WIT to follow them....... (KII participant)._

For some women participating in the FGDs, the quality improvement services offered by CHVs are not only good because CHVs offer encouragement and counselling when they are depressed, but indispensable and at times life-saving. According to CHVs, one area that the community definitely appreciates their effort as WITs in on teenage pregnancies:

_Now, our people, our community, have really... I appreciated it. Why? Because we monitor them. When she's pregnant, we advise them.......the girls who are pregnant by 15,17 years, their bodies are not ready to carry a baby......So, they find that that mother, the mother of the child or the girl, will appreciate it because she didn't know what to do. Maybe the girl had defaulted, she doesn't want to talk with her mother, she doesn't talk to anybody, she doesn't do anything. Now, from there, you find that this girl has learned how to dress. You'll find that some girls do wear tiny [tight-fitting and short] clothes (respondent 5, FGD 2, CHVs) ._

For being what CHVs in the FGDs referred to as being too lazy or not having the appropriate health information, CHVs report a change for the better in their work as WIT members:

_I would like to start by saying, the community has started to appreciate our work, cause we are educating them. And for now they can say that they have known the importance. You know before, they were saying, “I have just given birth”...... So now if you explain to them the importance, at least they now start to see like it makes sense (respondent 6, FGD 2, CHVs)._

**Referral**

With respect to referrals, CHVs and WRA in FGDs think that an important activity of the CHV within the efforts of the work improvement teams (WITs) is effective referrals:

_So they are afraid. So us we become their voice. So when we refer them when they come here [at the health facility] they are welcomed because we are the ones who have referred them and there is no scolding. So they appreciate us for our role (respondent 9, FGD2, CHVs)._
Social Nearness

The social nearness of the CHV to the community, as opposed to the health facility-based health providers, is clearly seen as an important point in the delivery of improved community health services through the WITs:

So you know that we are part of the community and with people who are used to us.

So as they continue seeing us and get used to us and they now can ask us questions which they wouldn't get information about before...... Even others were afraid of family planning methods. But I talk to them and they get to understand the importance (R9, FGD, CHVs).

Similar sentiments are echoed by women interviewed in the FGDs, while nevertheless appreciating the gentle and caring approach of particular service providers in a health facility:

Growing up we got used to being afraid of doctors, so we see them on badges, reflectors or white dust coats. [Nevertheless}, when they approach you they try to calm you and make sure you are in a cool mood before they start...... the community people [CHVs] are at our level we feel good and we can call them for advice (R10, FGD, mothers)

Community Contribution

The perception that the work of the CHVs through work improvement teams is a worthy cause and hence community involvement as well as contribution comes out from the interviews:

...... .We even have a space in my office where they regularly meet, those ones from my area, Area 2. They meet at my office because I have given them an area where they meet even with their clients, like when they want to speak to them (KII with the chief).

The Why Behind Change Ideas

The perception that clearing out the misunderstanding in the five MCH areas identified in the WIT process has had a turn for the better rings through the interviews. Coaches for WITs understand the importance of the change ideas embedded in the five intervention areas and sought to explain these to WIT members as clearly and practically as possible. It is also the “why” of these problems that comes out clearly in the narratives of the WIT coaches:

So the importance of those indicators, I will say, like for Kwambao A, and even in general, MR2 had not been fully understood... They were questioning why and he has been immunized against measles. So the perception out there, they had not digested the reason as to why the baby needs another booster. ....... And I think a lot of babies have benefited and not only in Kwambao A but in the entire Dandora 1 community. ....... Then looking at teenage pregnancy, you know, we had a problem when all the schools were closed
because of corona, so a lot of girls were getting pregnant. And if we were not there,........ I just don't know how many girls would have gotten pregnant. But now the intervention that we put has saved a lot of girls and also made them to go back to school those who are willing to go back to school. (KII with CHA).

A Sense And Feelings About Wit Efforts

Improvements in ownership of quality enhancement and CHU performance

Coaches and mentors for quality improvement and work improvement teams see ownership taking root due in part to the observation that CHUs with WITs understand the process. Nevertheless, it remains to be improved upon in certain instances particularly in the community:

[In the efforts of the WITs] ...there is excellent gain. Okay. Remember the gain is not to them, it is for the community due to the efforts they have made and the change in immunization and ANC. So the gains are good. And there is also what I'm calling ownership. You know QI needs a lot of ownership. For the CHUs who have been doing WITs, there is ownership of what they're doing. Understanding of QI is very key. They know the process. They don't just say, we have a problem here. They know how to put down the issues, they prioritize the number one issue, and they handle the issue. They know how to have even a problem statement, a goal statement which is smart, where they can achieve. So they understand the QI better, and they see its working........... The ones who are not doing QI, they don't have team work because QI is team work. And the ones who are doing WITs, they have more team work that they can share. Because as a team, they're moving toward a goal, to achieve (KII with SCQIT Lead).

Coaches and mentors also observe that compared to pre-introduction of WIT efforts, performance in the five indicators in particular growth monitoring has improved as a result of WIT implementation. This was however dampened during COVI-19 times but has improved thereafter.

What am I hearing? I am hearing and seeing good things. Cause one, you know that data speaks and for you to be able to say this, CHUs are working or the WITs are actually working, we need look at data. For example, I look at here before we began the WIT program, our data was on the lower side and more so for growth monitoring. And of course now when growth monitoring comes issues immunization and issues of malnutrition. Before we began this WITs, If can show you the data that we had there, we were not doing very well, but once the WITs were in place, we have been able to improve the performance..... I know with COVID, at some point, things went down, but we still able to pick up. As is right now, because beauty about here Dandora 1 is that we are still doing, WITs are still continuing (KII, Nutritionist).

Positive Feelings
Community health volunteers reported positive emotional feelings towards the training and implementation related to quality improvement through work improvement teams. The first of these feelings is initial helplessness pre-training, but ultimately empowerment post-training, mentoring, and coaching.

Let’s say you’ve gone to someone’s household and you have found that they have an issue; they may be unable to go to clinics for their own reasons. So yourself if you have no solution, you are stranded and wonder how you’ll return there. As CHVs we do monthly household visitation but as WIT, we do weekly. So you’ve gone there and wonder what you will tell them and you have no solution. But then as you go back the CHA has empowered you and impacted you and now you know how you’re going to talk to the mother (R6, FGD 2, CHVs).

Secondly, CHVs feel that they are motivated due to the detailed and respective technical knowledge they have received from their CHAs. This is in contrast to the pre-WIT training period when they felt inadequate and need to consult frequently with the CHAs:

Now, your question was, how am I feeling? I think that was the question. And to me as a community health worker, when I was trained by the CHA I was saying those people from the community should now come with all their questions. Because knowledge is power and I feel that when even that pregnant mother tells me that they are feeling pain here or she has blood spots, then I have the answer and know how to help her. But when I wasn’t trained, I was like when I go there, I must consult (R2, FGD2, CHVs).

Thirdly, in spite of the voluntary nature of their work, CHVs feel triumphant following their participant in WIT competitions.

Let me add something there, now with the work improvement team, when we went and were given all the trophies, surely you just build that...... Yes, we won! We won trophies. There was a competition...... It was a competition for all the WITs in Nairobi.

And two [WITs] got the trophies - Kamwangaini and Dandora kwa Mbao. Two units took all the trophies. The trophies, the certificates and the awards. So, it made us do or encouraged us to do more (R5, FGD2, CHVs).

**Experiences With Improving Health In The Community**

**Championing roles**

The notion of championing the improvement of community health services is apparent from the responses in the FGDs and KIIIs. For community health volunteers (CHVs), the predominant role that emerges with regard to improving maternal and child health (MCH) services in the community is that of educating mothers. The quotation below typifies what participants in the FGDs for CHVs and mothers had to say on the matter,
Since I am in the quality improvement team, as we are the ones who do the vaccinations, we start by educating pregnant women on the importance of vaccinations when they give birth. We start when they are pregnant, tell them the importance and explain to them all the vaccines. So that when the mother will give birth, they know the vaccine their child is supposed to get first till the last. Then we also have the book that is the community register. We have the names of the children, the parents and their phone numbers. We follow-up on the dates that the child is supposed to be going for vaccination (R2, FGD1, CHVs).

Women who participated in the FGDs and the key informant interview with the chief corroborate the education role of CHVs in improving community health services.

They have a major role to play, especially here in Dandora, where many people, I won't say they are ignorant, I will say perhaps they don't have the information or they have taken things like because we are in Dandora, we are in Eastlands, we have poorer prevalence [compared] to others........We have achieved much through their office. Through that organization, they have been able to attain much in terms of educating the community and interacting with them. ....... So they are very vital and they have really managed to attain a lot in matters of educating the community on matters health (KII with the chief).

The roles of the respective members of the quality improvement teams (QIT) and work improvement team (WIT) stand out – service provider (the nurse), health promotion, nutrition advice, coach and mentor. Two roles which nevertheless stand out are those of the community health assistant (driver or pilot) and the chief (the Government).

Okay, and I'm the CHA of this area, Dandora 1 health centre. And the role of CHA is very significant. Because it's like you are the driver, or the pilot. Whatever the CHVs want to take to the community, you must show them what to do and how to do it and how best to do it........ But it's like I'm the driver and I'm the pilot. I mess they'll mess and maybe the gap won't be filled properly (KII with the CHA).

Similarly, Government presence in the community is personified in the chief.

...people here in Dandora believe in taking the services to them. You will hear them asking, why don't they come here like they come for polio. Why don't they do the immunization here, the way they come here for covid, you see. But now, when they see those ladies and they see them with their chief most regularly they know it's the government that is working, it's a government project (KII with the chief).

**Disconnects**

Although CHVs champion quality improvement in community health services, what should be seamless linkages between level one (the community) and higher orders of the health system (health facility and above) often break down.
So myself, as an advocate between the community and hospital, there are disconnects, there are things that we haven’t achieved. The first is that my person has gotten a challenge. They have their pregnancy till the last moment, they have gone to the hospital at night, and when they reach there, they are told that you are going to give birth to a first born, you are not supposed to give birth here. They are told they should go and look for an ambulance. Beginner, a person who is almost giving birth, and they have come alone. You tell them to go and look for a car that will take them to Pumwani (maternity hospital). And at that time it is 2.00 a.m. in the morning. Could you put yourself in their shoes? When such a person comes back to the community, will they talk well of the health facility in this area? (R8, FGD with CHVs).

Similar information emerges from the responses of participants in FGDs with mothers and key informant interviews. Additional areas of discontinuity of service between levels one (community) and two (public health facility) include referral of mothers for first delivery to the city’s main maternity hospital rather than a health centre such as Dandora Phase 1, overcrowding in the main maternity hospital, the requirement to carry out laboratory test in another place rather than under one roof in the public health facility, unavailability of drugs including family planning methods, inadequate personnel, the demand to pay in cash rather than through existing delivery schemes such as “Linda Mama”.

The Process

Gapping

The FGD and KIIs conducted reveal the key steps that CHVs underwent in their WITs. In the terms of the participants, the main ones are gap analysis, discussing, and providing the solutions. For gap identification the emphasis emerging is practical identification of the gaps in the community and the households.

As a QI team, our major aim is to see that our community gets quality services.

And to make sure they get quality services, our role is to first do home visits. When we do home visits, we identify the gaps that are in the household. We also educate on things like immunization, on the importance of growth monitoring. After identifying and finding those gaps, maybe there are defaulters, we do referrals. We refer them to the facility........(R1, FGD 1, CHVs).

On the question of what is different in the new quality improvement (QI) approach, participants elaborated on the change from the business as usual routine to a new mind set:

Okay, what is different from the way that we used to do this will be like, there are some of the gaps that we identify, so through the work improvement team you have to think faster. And you see that this is a problem I can fix. It is a way of doing things that makes it different from how we usually do things. So the moment you have joined the Work Improvement Team group, it opens your mind and when you encounter a problem you think faster and act and find a solution to that. Rather than I would just sit as I was and I
don't have that mindset that I am supposed to do something. So it has broadened our mind and when you see such a problem you see by the way I can offer a solution to this challenge (R3, FGD1, CHVs)

Discussing

Deliberation among the CHVs about what they observe during community and household visits comes up as another step in the WIT processes. The core role of the community health assistant (CHA) as on-the-job mentor and coach also emerges.

But now we have seen it because we were not taught anything (in a formal training). But you now see going to the field, we have identified that there are children who are defaulters. This one (CHV) has identified that this child has not been breastfeeding properly. Another has identified that there is a mother who is pregnant and they don't attend clinics. So such things when put on the table right now, we start discussing then they give you input. Now we're supposed to do this (R5, FGD2, CHVs).

Critical Success Factors

Passion, commitment, and self-motivation

Participants in the FGDs and KIIs identified passion, commitment and self-motivation among CHVs as part of what would be counted as success factors in improving the quality of community maternal and child health services. For CHVs themselves, being taken out and participating in motivational activities such as seminars gives the passion and increased strength to work. This is because in their words, they are not paid but rather volunteers. In referring to commitment, CHVs clarified that this meant being available and being ready to learn. It is the voluntary nature of the CHVs’ work on the one hand and the un-predictable schedule of work that in particular call for self-motivation:

What I may see mostly, most CHVs it’s a call, they are self-driven. Even when there is something on there like let’s say me, I don’t give them anything. And I require them and I make calls to them and call them to come assist here, assist there….. You know this is Dandora [impoverished part of the city], you get a child who has not been attended and we don't have a place where you can keep them here in hospital, so they will be required to be with them, as we look for an alternative. Again, they work in our hours that I will say are hours outside the normal working hours. I can call them like at seven in the evening. I may call them very early in the morning. (KII, Chief).

Teamwork

Visiting together as a team of up to five sometimes including the CHA facilitates the work of quality improvement of MCH services in the community. The reason, according to CHVs, is that mothers in the
households see different team members are also able to talk to the mothers who in turn learns that the WIT is serious.

Yes, (we move to a household or community even in a group of four) or even 5. So when they come and see it is a different face again? So, my fellow colleagues also talk to her to add on what I said and they accept and see that this thing is now serious because someone else has again chipped in. So now work has become easier and they accept and take their child to hospital (R3, FGD2, CHVs).

Hurdles In Improving Quality Community Health Services

System-level issues

Work improvement teams face a number of hurdles as they seek to improve the quality of community health services. These include factors beyond WIT operations, those to do with CHVs as members of WITs, and mother-specific concerns. The lockdown during COVID-19 resulted in a slow-down of WIT activities. Community health volunteers in the FGDs and key informants interviewed described how this affected work improvement and how they coped. For CHVs, the mode of visitation changed from not visiting the households but rather conducting health education externally using mobile phones and if necessary within the proximity of households, while keeping social distance. Mothers and parents were apprehensive of visiting the health facilities but were advised to come back when the number of COVID infections subsided.

Participants narrated vivid recollections on how COVID-19 affected one of the five area for WIT interventions - teenage pregnancies

*It was on the rise during the corona period, that is the teenage pregnancy came up, and we were working together with them (CHVs in WITs) to see those girls, that class, those who were in school. And also we are working with them to make sure that they attend clinics because of their health and the health of the babies. So they are working on it, although during this time we don’t have much pregnancy, like during the time of corona because we are also doing sexual education for them (KII with the Chief).*

Working Tools

Unavailability of reporting forms (in particular MOH form 513 – household register; MOH 514 – weekly service delivery log; MOH 100 – community referral from) were mentioned by CHVs and individuals interviewed as a constraint to effective operations of the WITs for the five indicator areas just as for CHV work as a whole. Equipment for growth monitoring such as height boards and weighing scales were also identified by CHVs to be in short supply during their respective work. At the personal level of CHVs, items such as umbrella for rainy days in the community, t-shirts and badges for identification were equally mentioned.
The need for reporting tools is best captured in the response below:

*Okay. We need the reporting tool. For the longest time possible the reporting tools are not here. It is a big headache for the CHA. You outsource, you go out of your way, you look for these things, they are not there, how will you even improve this indicator without a reporting tool serious without a referral form? We are talking about improving quality, when we don’t even have a referral [form]. How is this CHV going to prove that for sure, I referred like five children? What I used to advise them is to take a plain paper, write your name, write all the details, the key details and refer the child….. Two, the community capture tools are not there. And even if they are there, they will not last even two months before they get finished. So that is a big issue, the reporting tool (KII, CHA).*

**Community Socio-economic Status**

Where the community is socio-economically disadvantaged, as in many households of Dandora 1 where the interviews took place, the effect on the performance of the WITs can be negative at the facility level:

*The others a factor is economic issues. Economically if a community is down, then that is an issue because when they come to our clinic, for example, of course, they need some other things like transport, they need this child to have taken something even the mother herself need to have taken something. So they’ll say instead of may be going to the clinic, I need to go maybe to the market and sell something (KII with SCQIT Leader).*

This is also evident at the level of the community:

*Remember also we have socio-economic factors. So, we have to bring in all those socio-economic factors because sometimes when you go and talk to the mothers on growth monitoring, this mother can tell you, “I don't have fare, Maybe the economy it's bad, so I can't even afford that time to come to the facility, I can't also have that money and come at the right time.” You know? (KII with the Chief).*

**Community Educational Levels**

Where literacy levels are low, as in several households in Dandora Phase 1, then the comprehending the health messages passed through WITs becomes a challenge:

*The other thing again is also education in the community. The education status of the community. How well is the community educated? Because remember, as we give information that this person needs to digest and also understand. But if the understanding is not there, illiteracy really affects a community total uptake. Even if you take the services down to the community, they will not uptake...This are some of the things that really affect (KII with SCQIT Lead).*

**Culture And Religion**
That some of the religious denominations do not believe in modern health services as opposed to spiritual healing is evident from the interviews.

Yes, about immunization, you know we have some sects who don't believe in going to the hospitals, I have handled some cases with them that they may have. They will go out collecting immunization records checking the children. They have something like a watch they tie in the hand.., [called mean upper arm circumference (MUAC)] - KII with CHA.

The culture or attitude of some mothers is also a problem:

Again, there's culture of I've delivered others and I've been going late, so why should I go as early as I realize I'm expectant? So mostly you find now that, do we call it culture or it is getting used to for the ones who have given birth severally, they don't see the need of going for ANC early. The other thing again, I have said it's about again, like for immunizations. When they get the last nine months, one year they are done with immunizations, you'll never see them. So MR2 is quite affected. They're like, why do we need to take this child again. Even in growth monitoring, usually they don't like bringing kids for growth monitoring because as they said, he is done with immunization (KII- SCQIT Lead).

**Challenges At Mother-child Level**

At the level of mothers and children, a number of additional factors were mentioned to be obstacles to quality improvement through work improvement teams. These include stigma, difficulties in counselling, cooperation, and fear among teenage mothers, as well as queuing.

Young people don't like being counselled ...... because remember, when they come for ANC there are several areas they have to visit the same day. They need to be counselled for HIV. They need to be counselled about FANC, focused antenatal care, which is lengthy, just to understand what your plans for this pregnancy are. Now, all those are the questions to be asked most of the young people don't like and also even ladies. Again, lining. They queue for long hours in the facility. If someone comes from morning up to afternoon and for example, those young girls they don't want to come and queue for long hours (KII with SCQIT).

Gaining cooperation from teenage mothers is a challenge for WIT members in a number of areas:

Mostly like those who are dealing with the teenage mothers, the cooperation. You know teenage mothers will hide, so getting to them might be a challenge. Again, not reaching to them or making them come, making them attend those meetings and then showing them need. You know this girl, even if she is pregnant she is not mature. She might not understand why you are telling her to go for immunization, to go to antenatal clinic then after delivery you are there (advising) about to postnatal clinic she might not understand. ...... but the CHVs that we have really do quite well. Because some are mothers, they know that we have seen them being born, they have seen them growing up. Again they stay with them they know when someone changes, they can see the problems.... (KII with the Chief).
Challenges At The Level Of Chvs

For CHVs in the WITS, the challenges experienced include lack of passion among some, workload, mental stress and need for counselling, and attrition. Community health volunteers without passion pose a difficulty, understandably, for implementation of WIT efforts.

Yes. I’ve said yes because sometime QI is a passion. If someone does not have passion for QI, you try to push, it's not getting anywhere until you get a staff, the CHVs who are able to have a passion on QI. Sometimes they feel it’s an added burden on what they’re doing, not knowing it's just the same thing, but you measure and you monitor. People are used to culture of come do go, come do go. So now when you tell someone, can we look at this data? Can we measure where we are? Can we now check par the standards where are we as per the national guidelines? Where are the standards, then can we try to move safe wise towards the standards to achieve? Now that becomes difficult some time (KII with CHA).

The CHV workload in WITs sometimes affects family and partner relationship.

The difficult accrued in our area, let’s talk first of all about sometimes they have a lot of work to do. They have report to make, they have to come to the health center regularly and you know, they’re parents mostly, they have their own homes. Let’s say you are married, and your husband don’t understand that calling, we have a problem with that. I was friends with one of them, and I was telling the husband, “I really thank you because you allow your wife to work with us. Because it is not all men who can allow.” And you know mostly this are women. Like in my area I think I have only two male CHVs. So women with the children with the house chores, and then at the end of the day, they will have to attend to family in the evening, and perhaps she's not come home at the expected time, it might be a problem. The husband might not understand. You’ve left here in the morning and then you have come with nothing............ Again, the children they think the mother works in hospital. So they may think that we should be well off because my mother works with the health practitioners (KII, Dandora Phase I health centre).

Verbal insults from some of the religious adherents may create mental anguish for CHVs:

Another issue is the security. Although we offer them security, sometimes these people are very brutal. You can find, especially those organized sects, the religion that does not accept modern health services, they are very brutal with words, with curses, they tell you all sorts of things. You know me, I will not be afraid of it, being with a CHV who resides here, you will meet the guy or the lady in the evening, they don't know what might be done to you. So the facility should have more things with them with matters mental health, so that they don't carry those things in their minds at the end it may affect them. So the difficulty we have here in Dandora (KII, Dandora Phase 1 health centre).

Drop out among CHVs slows down, as expected, the work improvement teams

So some of the challenges or the difficulties that we normally encounter one I’ll say about the high attrition rate of this CHVs. Remember when they wait and wait for this stipends and it is not forthcoming
and with the hard economic times, sometimes they are just fatigued and they just walk away. So if that happens, and this CHV was manning like 100 household, and she or he is the one who was known in that those household before, now you get to enroll another CHV, you take her through what the CHS needs and before she or he gets used to everything, you'll use like you lose a lot of data. Yeah. So that is one thing, high attrition rate has worked against us (KII with the CHA).

**Facility-level Constraints**

Lack of integration and infrastructure issues were reported to be another challenge at the level of the health facility, in respect to several aspects:

*So again, the period they stay in the facility affects actually the care for ANC and CWC because there, of course, sometimes they need to get several services in the same day and they’re not under one stop shop. That’s another challenge, that they’re not integrated. .......... But in integration has been an issue reason being one personnel, two, space. Rooms are tiny, they cannot allow integration. So structure of our facilities, the structure is quite challenging......... (KII with SCQIT).*

**Discussion**

In this study we have presented research findings on what participants recollect about WIT training and implementation; their opinions, sense, and feelings on WIT as implemented in their five CHUs; narration of first-hand experiences with efforts of WITs. This study also documents facilitators and hurdles in the implementation of WITs. Having been involved in WIT training and implementation, participants vividly recollect a number of aspects related to WIT training and implementation. These comprise the power of teamwork; the mentoring role of CHAs as key WIT champions; the value-add of WIT above routine CHV activities; creative and community-specific messaging solutions; the mother and child handbook as the basis for WIT target-setting and change plans; supportive supervision for the interlinked community and facility levels. Research on work improvement teams in impoverished urban social settings such as those in this study is scarce. Nevertheless studies in related areas [6] seem to concur with our results which emphasize the reliance of community WITs on community infrastructure and systems as well as teamwork.

Participants appreciate particular aspects of WIT training and implementation. These have to do with the leveraging of WITs in the structures of the community health units noted above. As the outcome is to improve health of the community members, WIT efforts at the community level (where the people live) compared to the health facility are perceived to buttress the health facility services leading to achievement of health outcomes of community members. For related reasons, mothers referred to health facilities by CHVs who have passed through WIT training are associated with warm reception rather than scolding. The social nearness of CHVs to community members endears more open sharing of health concerns as compared to health service providers based at the health facility. The community more readily contributes own resources such as working space to health quality improvement efforts.
Implementation of WIT activities through change ideas and plans is a powerful tool to convince mothers to address their health problems and those of their children as embedded is the process of explaining why the recommended health action is required. Similar to this study [13] sought to evaluate the effects of training of community health workers (CHWs) on their attitudes, readiness, and activities towards teamwork in the care of older adults in the Philippines. The results of the study showed an improvement in attitudes towards collaboration in the care of older adults, and may corroborate the positive perceptions of participants in this research about WITs.

Participants in WIT initially feel helplessness before WIT training and implementation. This transforms to a sense of empowerment as a result of the training and coaching. Motivation after receiving technical knowledge from mentors as well as triumph after winning in WIT competitions comprise the other feelings participants exhibit following WIT training and implementation. They also see ownership of quality improvements by the community units, as well as improvements in achievement of MCH indicators which nevertheless were dampened during the COVID-19 epidemic. A review of CHW training [14] does indeed show that training and coaching with relevant content as well as engaging CHWs with other cadres, all help to prepare CHWs for their roles.

Among the experiences of WIT members, the respective roles stand out. These include the CHV as the health educator, the CHA as piloting the coaching of WITs, and the chief personifying Government’s strong presence in the community. Participants - CHVs and other officers in the community health services department alike - narrated their experience of the disconnect between the community and the formal health system. Agreeing with other studies on the rarity of research on community QI [7], a research conducted in Ethiopia [15] finds that where QI interventions function well, demand for specific health services not only improves, but linkage and integration between the community-based extension services and facility health services improves. In the implementation of WIT activities, gapping (identifying health problems in the community and providing solutions) and discussions dominate as steps that CHVs experience. Identification of gaps and discussions point to application of the PDSA approach. This involves WITs identifying gaps, coming up with and testing change ideas, holding monthly meetings to show progress on indicators, and presentations of accomplishments [11].

Several factors facilitate quality improvement through community work improvement teams. Passion, commitment, and self-motivation even while being a volunteer rather a salaried worker is one of them. Another facilitating factor is visiting together as a team rather than undertaking solo household visits. Quality improvement through community WITs faces a number of hurdles. At the system level, socio-economic status of individual mothers and communities and illiteracy hamper uptake of MCH services and understanding of health messages. So does membership of some religious sects that do not believe in modern medicine. The lock-down during the COVID-19 epidemic restricted CHV access to households and referral to health facilities. At the mother-level, stigma and fear particularly among teenage mothers represents a challenge for quality improvement through WITs. For CHVs, challenges include mental stress endured through visits to hostile households and high drop-out. At the facility-level, just as a similar study
[conducted in Ethiopia [15], dispersed and vertical health services hamper delivery (to those referred by CHVs serving in community QITs).

**Limitations**

The merit of this study is that it has provided an in-depth and rich array of emic perspectives and experiences on work improvement dynamics in the particular case of five community units linked to Dandora Phase I health center of Kasarani Sub-County. To the extent that the five WIT presentations had documented quantitative improvements in regard to the five MCH indicators during implementation, achievements which are not captured by the official Kenya Health Information System (KHIS), this represents a limitation of the study. The opportunity to apply the more rigorous mixed-methods design that would have corroborated the reported significant improvements in indicator performance during WIT implementation is therefore missed thus highlighting this limitation.

**Conclusion**

Community health volunteers and other respondents in this qualitative study are aware of different facets of WIT training, coaching, and implementation. They appreciate several aspects of quality improvement through WITs many of which have to do with the buttressing features of the community health unit. Respondent experiences range from playing respective WIT roles to the disconnecting community and formal health systems, to implementation processes. These awareness-attitude and experience changes are enabled by a set of factors which include passionate CHVs and coaches on the one hand, and collaborative communities in particular the chief who is seen as the presence of Government in the community. Not least among several hurdles are community low socio-economic status, educational levels, and religious sects opposed to modern medicine.

Considering community health services as a product, the initiation and implementation of WITs can be an inflection, rejuvenating, and transformative event in the performance cycle of community health services. This rejuvenation translating into improved performance, is particularly important in older CHUs which have been in operation longer. Additional to this qualitative evaluation approach, Government and stakeholders in health quality improvement should organize for mixed methods approaches that would answer the question of the “how much” of quality improvement. This should involve putting in place policy arrangements to ensure changes in health information system templates should cut across all related areas, including respective community health forms. The community WIT method for improvement in health quality and performance holds promise and should be scaled to other community health units and regions.

**Abbreviations**

ANC: Ante-natal care
USAID: United States agency for international development
WITs: Work improvement teams
WRAs: Women of reproductive age

**Declarations**

**Acknowledgements**

The authors thank all FGD and KII participants for their inputs and collaboration during the interviews. In addition, we appreciate the management of the City county of Nairobi together with Kasarani Sub-County health team and of Dandora Phase I health centre for their facilitation for and during the interviews. The research assistants who facilitated and moderated the interviews are last but not least warmly appreciated.

**Author contributions**

RA, SA, MO, LN, JM and DO jointly developed, revised, and finalized the research protocol for this study. DO, RA, MO, and LN supervised the finalization of the interview tools, pilot, data collection, and transcription. DO facilitated and conducted data coding and analysis respectively. Writing the manuscript was led by DO, with RA, MO, and LN contributing comments on draft manuscripts. RA provided the overall technical oversight throughout the study and in particular providing leadership to the study team. All six authors read and approved the final manuscript.

**Funding**

Activities for this study were conducted under the Amref iPUSH program, which was funded by the Dutch Postcode Lottery Fund.

**Availability of data and materials**

Interview instruments used during this study are attached as Additional file 1. Audio recordings and interview transcripts, based on ethical procedures in particular, are available through the corresponding author upon request.

**Ethics approval and consent to participate**

The study protocol was approved by the Amref Ethics and Scientific Review Committee (ESRC) REF: Amref - ESRC P1131/2022 through a letter dated April 11, 2022. As per the protocols in the interview guides, all the respondents were informed of the purpose of the study, potential risks and benefits of the study, as well as assuring them of the confidentiality as participants in the study. Signed informed consent was obtained from all participants.
Respondents were informed that they were free to decline to participate at any time or to withdraw from the study. Thus, throughout the process of protocol development for ethical clearance, conducting the study, and writing up this research, the authors abided with international ethical declarations on human participants of which the Declaration of Helsinki is an important part.

**Consent for publication**

Not applicable. This study does not contain any individual personal data.

**Competing interests**

The authors declare that they have no competing interests.

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11. SPRING. Using a Quality Improvement Approach in Facilities and Communities in Ghana: Enhancing Nutrition within the First 1,000 Days


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