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Utilization of Community Based Health Information Systems; Management and Community Service Delivery in Kenya

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Abstract

Background: Essential health services for communities continue to be a challenge in low income countries, due to challenges of infrastructure, constrained health workforce, insufficient funds and weak health systems. Large scale community health programs have utilized various strategies based on the Alma Ata primary health care declaration in 1978 where community participation, multi-sectoral engagement and involvement of community workers play and important role. While the governance and management of community level health services hinge on the formal health system, the information linkages between the community structures influence access of services by households. Kenya has implemented a community health strategy that combines community level structures and workers to reach households with services through an information structure. *Methods*: A qualitative study was undertaken in two counties in Kenya that were implementing the government's Community Health Strategy since 2006. The study used a questionnaire guide for data collection from respondents consisting of Community Health Workers, Community Committee members, Community Health Extension Workers and service users. Qualitative analysis of the data consisted of thematic explorations of the information to determine overall inferences. *Results:* The community based health information reflected on the Ministry of Health tool, the chalkboard, forms the theme that CHWs used in the household, compromising with some individual household health needs. *Conclusion:* The CHWs need to be sensitized on prioritizing household health needs alongside the general theme that arise from the chalk board information. CHWs need access to the household registers periodically to help them to determine dialogue topics during household visits.

Keywords

Community Health Workers, Community Information Linkages, Health Systems, Human Resources for Health, Health Systems Strengthening

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1. Background

Some of the challenges to effective health delivery in resource constrained settings are primarily pegged on the governance and management of the health system. WHO identifies information systems alongside financial systems as key for effective health delivery [1]. An information system is one of the vital health systems building blocks, where a well-functioning health information system safeguards information production, analysis, dissemination and timely use in order to influence health systems performance and the health status of populations. Information plays an important role in the effective management of services which includes planning, implementing and evaluating services and ensuring availability of resources (human resource, equipment, supplies) in partnership with stakeholder and service users.

While efforts to improve management have either addressed specific areas such as information, finance or logistic systems, a system wide approach for improvement is more amendable for community based health care delivery due to the varied

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stakeholders engaged in the process of information collection, dissemination and use. Successes have been documented in addressing information and reporting systems through system-wide approaches, for example, in the development and improvement of district management systems. [2].

Information linkages for community service delivery invariable includes CHWs who are the first point of contact with users in the community. The role of CHWs continue to be debated back and forth since their formal recognition as key players in health care, following Alma Ata's primary health care declaration in 1978 [3]. Studies in resource constrained settings in Sub-Saharan Africa and in other well-resourced settings have been undertaken on the roles, effectiveness and sustainability of the CHW workforce, most reaching the conclusion that CHWs are important in health care provision, although their effectiveness and targeting of promotive and preventive health issues within a health system may vary in different settings. With the constrained health workforce in low income countries [4, 5] the past and changing roles of the CHWs have become even more critical in reaching households with health information aimed at changing household health behaviours. In particular, their role in information collection and dissemination continues to be important for addressing health indicators. Health indicators among mothers and children who are most vulnerable at different stages of their life cycle has not markedly improved in Kenya. The current maternal mortality rate is 488 per 100'000; an increase from the previous estimation of 414 per 100'000; furthermore, neonatal mortality in Kenya remains high at 31 per 1000 and is a significant contributor to childhood mortality. An important contributor to maternal and neonatal deaths is the lack of access to skilled delivery. At present, 40% of deliveries occur without skilled attendance while family planning use less than half (46%) among women of reproductive age [6].

These indicators among others call for a strategy that reaches populations with effective health interventions and particularly with health information. The Kenya Community Health Strategy initiated in 2006 is an approach that targets populations using CHWs to reach households. Alongside CHWs in the strategy are the Community Health Units (CHUs), manned by formally employed personnel at Tier 1 of the health system that link to formal health facilities. CHUs have a governance and management structure comprising of the technical team (Community Health Extension workers (CHEW) and clinical staff) and the community partnership team (CHCs, CHWs) to ensure delivery of services. In most cases these CHU staff have to consult with community level stakeholders on service provision, uptake, outreach services and health campaigns. For the CHU management to operate effectively, it requires a well-functioning information system that goes beyond the health facility and links with the Community Health Committees (CHCs) and the CHWs, who then link directly with households. The effective governance and management operations of the CHU as the immediate formal health unit linked to the community requires a robust information system that will assist the CHU to plan and deliver services that immediately address health indicators in the community.

Information is a key building block of the health system, and involves community level players and service providers. However there are gaps in knowledge on the approaches used in collecting and sharing information at Tier 1 and community levels and the relationship between the information linkages and management of service delivery to communities [1]. This study examined the information linkages at the community level involving the CHCs and CHWs, and information at the CHU/facility level to determine influences on governance, management and service delivery at the community level.

This study is important in that it examines the existing information linkages at the community level, Where information forms the focal point for health planning, uptake and follow-up where Community Health Workers (CHW) form a critical layer of the informal health workforce. The supportive structures around community level health planning, governance and its management and execution requires information that is shared across the community health management structure that includes, CHEW, CHU link facility.

While global research has noted the importance of the role of the CHW in health outcomes [7,8,9,10,11,12], the important role of health an information systems including linkages and forms of communication need to be identified and maximally utilized. There is need to identify the elements at the community level that influence how information is collected, disseminated and used in the providing of health services. A gap in information analysis exists given the newly decentralized counties, where counties have an even create opportunity to utilize real-time data. Kenya has an information system that incorporates the community level where information is collected, collated and fed into a central system.

This study undertook to examine the information linkages at the community level that affect the governance and management of services provided to community members either at the CHU or at the households. The study, while acknowledging the effectiveness of the community level health workforce over the decades, before and after Alma Ata in supporting access to health care, examines the information linkages that affect governance, management and service

delivery at community levels. The study examines the information role played by communities and the community health workforce in the Kenyan health system under the Community Health Strategy [10] that hold the primary health care principles of community participation, preventing disease, multisectoral collaboration and equity, and decentralized health services. Information gathering, sharing and use is analyzed as illustrated through purposeful or deliberative dialogue at the community level.

2. Methods

A qualitative study was undertaken in December 2012 and January 2013 in two of the 47 counties in Kenya that were implementing the government's Community Health Strategy since 2006. The two sites: Kajiado County in the eastern region and Kisumu County in the western region have markedly contrasting characteristics in their socio-economic factors and disease patterns. These sites were purposively selected due to their long-term implementation of the Community Health Strategy and working relations with the Great Lakes University of Kisumu that provided community health training to health workers in the country.

The study used a key interview informant questionnaire guide to collect information from 73 respondents consisting of Community Health Workers, Community Committee members, Community Health Extension Workers and service users. Questions were asked that explored the knowledge, attitude and practice on the effectiveness of deliberative dialogue in increasing demand for information at the Community Health Unit levels. The questionnaire aimed to establish the current and future use of objective local health data and statistics to inform and guide dialogue and decision making in community settings. Qualitative analysis involved thematic analysis of the open ended responses using key variables, and use of frequencies and percentages where relevant, to determine overall conclusions.

3. Results

A total of 73 respondents were interviewed and comprised Community Health Workers (68%), Community Health Committee members (18%), Community Health Extension Workers (4%) service providers (3%) and service users (7%). The majority of respondents were CHWs and Community Health Committees, hence provided a viewpoint that was clearly focused on the community level. Use of information for dialogue. Results presented are on who used information, sources of information and how that information was used for dialogue in order to improve community health services.

3.1. Dialogue with Households

Community Health Workers (CHWs) in both regions (48%) were the ones who held dialogue with households and were also perceived as responsible for conducting dialogue with households (59%). CHCs (22%) and CHEWs (21%) played a lesser role in this activity.

The sources of data for dialogue and decision making were the CHU chalk boards, household registers, the CHW service delivery logs (Ministry of Health register 514). The household registers (Ministry of Health register 513) were used by the CHEWs to summarize data into the Ministry of Health form 515 and chalkboard (Ministry of Health form 516). The chalkboards and the CHW service delivery logs were considered as the most appropriate sources of data for dialogue and decision making. Alongside these tools, the tool for measuring Mid-Upper Arm Circumference (MUAC tape) to assess malnutrition of children was mentioned as providing data for dialogue.

3.2. Topics Usually Discussed During Dialogue with Households

The topics most discussed with households were nutrition, family planning, water treatment and sanitation, with less mention of immunization, antenatal attendace and skilled attended delivery (Table 1). There was variation in the conversations between the CHWs and households in the two regions; there was dialogue of exclusive breast-feeding, latrine use and skilled attendance in delivery, while the household discussions in Kisumu revolved around nutrition, food security, immunisation, family planning and water treatment.

Table 1. Topics discussed during dialogue with households (frequency of cases mentioned=148).

	Topics	%
1	Nutrition & MUAC	18 (12%)
2	Family planning	17 (11%)
3	Water treatment	15 (10%)
4	Sanitation	14 (9%)
5	Immunization	11 (7%)
6	Exclusive breastfeeding	10 (8%)
7	Food security	6 (4%)
8	Latrine coverage	6 (4%)
9	HIV/AIDS	5(3%)
10	Four antenatal clinic visits (ANC)	4 (3%)
11	Use of Insecticide Treated Nets (ITN)	4 (3%)
12	Hand washing	3 (2%)
13	Skilled attended delivery	2(1%)
14	Protection and security	2 (1%)

CHWs used health information they had gained within one week of receiving the information and these were related to issues of sanitation, immunization, nutrition and water treatment. Other inforamtion related to long-term actions such as family planning, latrine coverage and food security were used more than a month after receipt. Monthly use of data was considered appropriate for dialogue and planning for health improvement.

3.3. Methods Used for Conducting Dialogue

Respondents preferred the use of participatory methods, including demonstrations, drama, role plays and gallery walks to discuss health issues. Respondents noted that the variety of methods used allowed information to effectively reach the communities. CHEWs facilitated discussions using the data on chalkboards, followed with community discussions on the issues and the way forward on solving those issues. Meetings and dialogue days as well as family household visits were used to dialogue. Chief's barazas and dialogue days where communities gathered to hear specific messages were rated second:

"Barazas are not 100% efficient due to big numbers of people attending, dominating individuals, most do not voice their opinions/suggestions" – CHEW Kajiado

"Face-to-face dialogue is more effective in reaching households" – CHW Kisumu

3.4. Changes in Health in the Community Attributed to the Use of Data for Dialogue and Decision Making

The majority of respondents (74%) mentioned that they conducted dialogue based on existing and recent health statistics and data. Participants during dialogue sessions were communities, CHEWs CHWs, CHCs, the local administration including chiefs, other stakeholders engaged with the communities in various health and development work and to a lesser extent, participation of the health workers from facilities.

Respondents were asked about the changes in health in the community that they attributed to the use of data for dialogue and decision making. They indicated health practices had improved in the communities with particular changes in the use of latrines, treatment of water, nutrition and pregnant women having birth plans. There was less mention of skilled birth deliveries and immunization as having improved due to data use for dialogue and decision making.

The use of data for dialogue and decision making was acceptable to CHWs:

"It is a good approach, with people owning their health"

"The system is good and we have been trained,….from data, communities realize the importance of health improvement".

"The system of using data for dialogue is good as data reflects the general health standard of the community"

"Data use has facilitated mobilization of communities and influenced health practices such as exclusive breastfeeding, and latrine construction".

Influencing factors that may also pose challenges to use of chalkboard evidence by communities were mentioned as cultural beliefs on health practices, for example, on breastfeeding and weaning; management issues such as unavailable data collection tools; poor information flow; inadequate support of the CHWs by the CHCs and lack of coordination between the CHWs and CHEWS for referrals.

The CHEWs felt that despite a lot of data that might be available, it was only the felt health problems that were given priority in the community. Furthermore, a health problem not recorded could also be given priority by communities. CHCs noted that data enabled them to identify the health indicators to focus and was useful for referrals and legitimizing health actions required of the communities and for planning with policy makers and other stakeholders.

Service users valued data in that it provided informed decision making in referral and follow up and supported health improvement in the community.

3.5. Increase of Data Use for Dialogue and Decision Making

Information was sought on what the respondents were currently doing to increase the use of data for dialogue and decision making. Most reported using data to create awareness on health issues affecting the communities and as having "community conversations" using the data, which at times was displayed on the chalkboard and having meetings for health talks. CHEWS mentioned data analysis using the chalkboard for easy utilization by communities in decision making.

Increased data use could be furthered through the following:

i) Planning and coordination:

Governance and management of information and its use for planning took place at community level meetings and dialogue days while the same process at the CHU levels also involved meetings, coupled with supervision and participation in the dialogue days. Topics discussed were:

Linkage between the community and the facility for services

ii) Capacity building:

Additional training of CHWs, e.g. in the 7 domains and

including new technologies & skills

iii) Adequate supplies: For example data collection materials

iv) Supervision and motivation: For CHWs

4. Discussions

This study used data from purposively selected Community Health Unit sites to determine the role of dialogue as an information approach in strengthening the health system for service delivery at community levels. The study focused in only 2 of the 47 counties in Kenya and may not be representative of other counties that may differ in how they operate their CHUs and the role that information plays in household and community interactions.

The study findings indicate that they is need to align household dialogue by CHWs to focus on priority health issues as identified by evidence of data collected using various tools. The contrasting findings between the two sites with regards to frequency of topics discussed as well as what the health workers dialogue about is evidence for changing the approach currently used in information use by CHWs .There is minimal congruence between data generated and displayed on chalkboards for community dialogue and planning on the one hand, and CHWs messages to households and pertinent health indicators on the other.

This study has similar findings to others in literature that cite experiences in providing community level health care and where CHWs play a pivotal role in health information; the experiences indicate that inadequacies in supervision, logistics, materials for the CHWs work as well as the lack of motivation or incentives and career progression led to demotivation, poor performance and low retention of CHWs. Important in literature is also the management and governance systems linking communities with the health facilities [11,12] which in this study was the CHUs, found to be influential in data collection and use. Different from literature, the study found out the need for targeted information to households by CHWs, based on evidence from household registers to guide their discussions.

5. Recommendations

There is need to orient the CHEWs on advising the CHWs to use the individual house hold registers to address issues based on each household register.

There is need for greater coordination among the interested partners in terms of each utilizing the strengths to support CHUs in capacity building, for example GLUK as a learning institution to continue on giving knowledge.

The chalk board information (outcome) should always be used for planning and decision making.

5.1. Household Dialogue and Sources of Data

The CHWs are the predominant focal persons for household dialogue on health and point to other evidence on that indicate the key role that CHWs play in impacting on health indicators. The mention of the MUAC tape, in addition to the chalk-board indicated the importance of visual display of information as part of the dialogue process. Visual display prompts joint discussions towards consensus for action.

5.2. Household Dialogue and Health Outcomes

The variations on topics discussed with households may be context-related where the CHW has a preference of topic or in situations where the household leads in the choice of topic to be discussed or the CHW may use the household register information to focus on the health issue pertaining to that particular household. Utilization of information by the CHW in household dialogue aims to translate into increased household knowledge, decision-making and health uptake, which ultimately influences health outcomes. In Kisumu where there is minimal link between what is discussed during dialogue with households and the health outcome indicates that household dialogue may not be the only decision-making point for health actions by families. It may also be the case that CHWs do not fully utilize the household data to guide their dialogue with family members or they do not have the competencies to translate household health issues into meaningful and decision oriented dialogue with household members.

5.3. Collection and Use of Data at Community Level

The perceived role of both the CHEWs and CHWs as the ones to decide on data use for dialogue and decision making may reflect the dual role that these 2 cadres play in health information flow. While CHWs are the primary players in household dialogue, the CHEWs play a greater role in collation, analysis and availing the data to guide planning and implementation of health services. Furthermore, the CHEW has supervisory and training roles and is the main link with the CHU. Continuing management support need to be provided to the different levels of personnel at the community (CHCs) and CHU (CHEWs, service providers) levels. The support may be in the form of consistent supportive supervision by managers at the different levels of the health system, technical support to the CHEW in data

management and field experiences in other counties or locations for learning.

Data trends comparison is focused on monthly trends and on the immediate felt needs of communities, an approach that does not depict the true situation if yearly trends were done and long-term solutions derived from such an analysis.

The aim of a dialogue process is for consensus building and action through face-to-face interactions. The dialogue results in the articulating and illuminating perspectives and developing solutions to community concerns. The preferred face-to-face interaction reflects the cultural means of expression and discourse and is likely to lead to higher levels of receptivity to messages related to health behavior.

The changes in health in the community that they attributed to the use of data for dialogue and decision making closely resembled the topics that the CHW dialogued on with households, and were not congruent with the health indicators that needed improvement such as ANC visits, skilled attendance of delivery and immunization as was the case in Kisumu. There appeared to be a gap in use of information by CHWs for focused dialogue at household levels. Further orientation on simple data analysis and its use at household level is needed for CHWs, in addition to skills on use of data for face-to-face dialogue that results in health actions by households.

Decisions by communities on health actions are not always based on the chalkboard evidence as experienced by CHEWs and CHWs. Managerial and supervision skills are required at the CHU level, which can be attained through short on-the job trainings through a mentorship and capacity building approach.

6. Conclusions

The general chalk board information outcome was the theme for discussions for the CHW household visits, overlooking individual households that could have different health needs.

Further research is needed on the effectiveness of targeting health information at the household by CHWs, and the use of information in the supportive community level governance and management structures.

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References

[1] WHO. 2008. Task Shifting: Rational Redistribution of Tasks among Health Workforce Teams: Global Recommendations and Guidelines. Geneva: WHO. http://www.who.int/healthsystems/TTRTaskShifting.pdf

[2] Egger D, Travis P, Dovlo D, Hawken L. Strengthening management in low-income countries. Department of Health System Policies and Operations, Evidence and Information for Policy, WHO EIP/healthsystems/2005.1. Making health systems work: Working paper No. 1

[3] WHO, UNICEF. 1978. Declaration of Alma-Ata. Adopted at the Int. Conf. Primary Health Care, Sept. 6–12, Alma-Ata, USSR. http://www.who.int/publications/almaata_declaration_en.pdf

[4] WHO. 2006. The Global Shortage of Health Workers and Its Impact: WHO Fact Sheet 302. Geneva: WHO

[5] 2008-2009 Kenya Demographic Health Survey

[6] Bhutta ZA, Lassi ZS, Pariyo G, Huicho L. 2010. Global Experience of Community Health Workers for Delivery of Health Related Millennium Development Goals: A Systematic Review, Country Case Studies, and Recommendations for Integration into National Health Systems. Geneva: World Health Organ., Global Health Workforce Alliance. http://www.who.int/workforcealliance/knowledge/publications /CHW_ FullReport_2010.pdf

[7] Gibbons MC, Tyus NC. 2007. Systematic review of US-based randomized controlled trials using community health workers. Prog. Community Health Partnersh. 1:371–81

[8] Counihan H, Harvey SA, Sekeseke-Chinyama M, Hamainza B, Banda R, et al. 2012. Community health workers use malaria rapid diagnostic tests (RDTs) safely and accurately: results of a longitudinal study in Zambia. Am. J. Trop. Med. Hyg. 87:57–63

[9] Hall J. 2011. Effective community-based interventions to improve exclusive breast feeding at four to six months in low- and low-middle-income countries: a systematic review of randomised controlled trials. Midwifery 27:497–502

[10] Ingram M, Reinschmidt KM, Schachter KA, Davidson CL, Sabo SJ, et al. 2012. Establishing a professional profile of community health workers: results from a national study of roles, activities and training. J. Community Health 37:529–37

[11] Lassi ZS, Haider BA, Bhutta ZA. 2010. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes. Cochrane Database Syst. Rev. 11:CD007754

[12] Kenya Ministry of Health Community Health Strategy, 2006

[13] Cassels A and Janovsky K. Strengthening health management in districts and provinces. Geneva, World Health Organization, 1995.

[14] WHO. 2006. The Global Shortage of Health Workers and Its Impact: WHO Fact Sheet 302. Geneva: WHO