USE OF DATA IN HEALTH PLANNING PROCESS: STORIES FROM COUNCIL HEALTH MANAGEMENT TEAMS IN TANZANIA

MACKFALLEN GILIADI ANASEL[1, 2] & IDDA LYATONGA SWAI[3]

1. Department of Health Systems Management, School of Public Administration and Management, Mzumbe University, Morogoro, Tanzania

2. Centre of Excellence in Health Monitoring and Evaluation, Mzumbe University, Morogoro, Tanzania

3. Department of Local Government Management, School of Public Administration and Management, Mzumbe University, Morogoro, Tanzania

Correspondence to: Mackfallen G. Anasel, Department of Health Systems Managements, School of Public Administration and Management, Mzumbe University, P.O. Box 2 Mzumbe, Morogoro, Tanzania. Tel: 255 784 705072. E-mail: mganasel@mzumbe.ac.tz; maremay2k@yahoo.co.uk.

Introduction
In Tanzania, the provision of primary health care services is vested to Local Government Authorities. Council Health Management Teams prepare Comprehensive Council Health Plans to guide the provision of health services within the authorities. The purpose of this study was to describe the process of preparing CCHPs, including the data sources used.

Methods
Three focus group discussions were conducted with 15 CHMT members. Participants were selected using convenience sampling. Thematic analysis was conducted after discussions that were translated into English and transcribed.

Results
The focal person and coordinators for the Health Management Information System were cited as the main sources of data for planning. District Health Information System (DHIS2) was the main source of data used in planning although there were some indicators reported, which were far from reality, and therefore, considered unreliable.

Conclusion
CHMT members should be trained in the basic analysis, and use of DHIS2 data. This would improve their data analysis, and use skills since are imperative to developing a culture of data use in planning.

Keywords: Data use, Planning, Council Health Management Team, Local Government Authorities, Tanzania

INTRODUCTION
The Tanzania National Health Policy (2007) stipulates five levels of health facilities in Tanzania: (1) National/consultant hospitals, (2) regional referral hospitals, (3) district hospitals, (4) health centres, and (5) dispensaries. The highest level of hospital services in the country is offered by consultant hospitals. Below this, each region has a regional referral hospital, and every Local Government Authority (LGA) has a district hospital. District hospitals are either public hospitals or private sector hospitals operating under public-private partnership terms (PPP). Such heath facilities, they are known as District Designated Hospitals (DDHs). DDHs have equivalent competence to public district hospitals. At the ward level, there are Health Centres, and every ward in the country is supposed to have a health centre. The lowest level health facility is the dispensary, which fundamentally aims at providing services in rural areas (Anasel, 2017).

District Hospitals, Health Centres, and Dispensaries are meant to provide primary health services.

According to the National Health Policy (2007), LGAs are responsible for guiding and supervising the provision of health services at the council level. The responsibilities of LGAs include management of district hospitals, health centres, and dispensaries. The LGAs are also responsible for the development of the Comprehensive Council Health Plan (CCHP). The plan provides a direction (blue-print) for the delivery of health services at council-level and below it. The plan must be approved by the Council of a respective LGA.

Good planning and management of health services depends on the availability of reliable, accurate and timely data (Anasel, 2017; Endriyas *et al*, 2019). In the health sector in Tanzania, most data are collected manually through a paper-based Health Management Information System (HMIS)

known in Swahili as *Mfumo wa Takwimu wa Uendeshaji wa Huduma za Afya* (MTUHA). These data are then imported into the District Health Information System (DHIS2). The DHIS2 is a web-based application which contains aggregate data related to patient care. The tool is embedded with functionalities that enable analysis, reporting, and dissemination of data for health programmes. When used properly, it can provide feedback on a heath facility performance (Lungo, 2008). Data from DHIS2 can also be used as baseline data for district planning processes, and for guiding supportive supervision visits (Karuri *et al.,* 2014).

Despite improvements in health data in Tanzania in the past fifteen years, including the introduction of DHIS2, audits have raised concerns about the quality of data collected through routine systems (National Guidelines for Health Data Quality Assessment, 2016). The purpose of this study was to examine how data are being used by CHMT members during the development of the CCHP.   In particular, the study sought to answer two main questions:

1. How do CHMT members prepare CCHPs?
2. What are the sources of data used by CHMTs in the planning process?

METHODS
Study design and setting
To achieve our research objectives, a qualitative study design was performed to get the communal experiences in planning processes. The data sources were the Council Health Management members (CHMTs) from 12 regions namely Tabora, Dodoma, Mara, Coast Region, Singida, Dodoma, Morogoro, Lindi, Songwe, Tanga, Ruvuma and Mwanza. The CHMTs who participated in FGD zones namely Lake zone, Northern Zone, Eastern Zone, Central Zone, Western Zone, Southern Highland Zone, Southern Zone.

Study subjects and sampling methodology
Three focus group discussions (FGDs) were conducted with fifteen participants. Participants were Mzumbe University Master's degree programme students. The students included in the study were members of CHMTs or health secretaries before they joined the University. The sample size had a representation from all seven zones of the Tanzania Demographic Health Survey (DHS) (see Table 1). The presence of participants at the university either on coursework or on wait time to graduate. From the presence of the participants, it made this the study's strategy cost-effective, efficient, and convenient. It could be difficult, expensive, and time consuming to reach CHMT members and health secretaries from the seven zones for an FGD. Needless to say, their presence for other purposes at the university made it easier for the researchers to conduct FGD with CHMT members. To minimise bias, participants were informed about the study and assured that their participation and responses would not affect their studies or their employment. In this regard, the FGD comprised students who were on coursework, and students who had completed their coursework; therefore, they were waiting for their degree awards.

Table 1: Characteristics of Respondents

Attributes of Respondents	Frequency	Percentage
Age of Participants (in years)		
30 – 35	4	26.7
36 – 40	5	33.3
41 – 45	5	33.3
46 – 50	1	6.7
Sex		
Male	10	66.7
Female	5	33.3
Education Level		
Bachelor	3	20
Master	12	80
Working Experience		
0 – 5 years	3	20
6 – 10 years	5	33.3
11 – 15 years	5	33.3
Above 15 years	2	13.3
Marital Status		
Married	14	93.3
Single	1	6.7
Region		
Tabora	2	13.3
Dodoma	1	6.7
Mara	2	13.3
Coast Region	1	6.7
Singida	1	6.7
Dodoma	1	6.7
Morogoro	2	13.3
Lindi	1	6.7
Songwe	1	6.7
Tanga	1	6.7
Ruvuma	1	6.7
Mwanza	1	6.7

Source: Field data 2018

Data collection tools and procedures
FGD guides were developed in English and translated into Swahili to guide the discussions. FGDs were conducted by a team of two researchers in a private office at the Mzumbe University. The first researcher moderated the discussion, while the second researcher recorded observations. To add, the second researcher developed a discussion flow diagram (annex 1), and managed the audio recording. The moderator used probes to ensure that participants provided relevant information to address the research objectives. More probing was done when there were emerging issues/concept(s) that emanated from a question that was not predetermined in the

FGD guide.

Data Analysis

Thematic analysis was done to describe different themes arose from the FGD participants. The identified themes revolved around planning processes and sources of data used. Transcription of the recorded information was done within 72 hours after the interview to be able to recall any information missing from the recording. Translation and transcription were done simultaneous in English, while the FGD was done in Swahili. This was followed by repeatedly reading the transcripts to cross check for data quality and grasp the overall sense of the data. Thereafter, the transcribed texts were imported into ATLAS.ti. Within the programme, all data were coded inductively revolving around two main themes: planning processes and the uses of data in planning. Grouping was done for similar themes to form families. Two main families were formed, namely, planning processes and data uses in planning. After coding and creation of code families, memos were created to add the researchers' views on the coded concepts. This was included in the descriptive report produced by ATLAS.ti. The final report was written based on the downloaded output from the software.

Ethical Considerations

The Directorate of Research, Publications and Postgraduate Studies at Mzumbe University where the study was conducted endorsed the study. The FGD participants gave verbal consent and confidentiality was ensured to them. Prior to FGD the participants were clearly informed that they are entitled to withdraw from the study any time they wished without any consequence. The participants were assured that the information collected was used for the purposes of the study and not otherwise. They were further informed that the information collected was not aiming at helping them directly, but that it could benefit many other people in the future because it might help improve the planning processes.

In addition, they were informed that the information from FGD were confidential, and that the analysis of the data would be done anonymously. A potential obstacle for effective FGD was the fact that the moderator and note take were Lecture at Mzumbe University. Yet the introduction made and explanation done on the benefit of the study enabled the researcher to collect the data without a problem.

RESULTS
Planning Processes

Prior to 2017, the planning process at the LGA generally started with CHMT members collecting plans prepared by the district hospital, health centres, and dispensaries. The purpose was to include the plans in the CCHP. However, this process was designed to prepare plans and budgets at the council level, and this was done without allocating funds to individual health facilities. CCHPs were reviewed and discussed by Council Health Planning Teams (CHPTs) before submission to the Regional Secretariat. The same was finally submitted to the President's Office Regional Administration and Local Government (PO-RALG) for final

assessment, approval, and funding. This was a long process and sometimes continued even after approval was obtained. From the physical year 2017/2018, a new way of financing health facilities was introduced. It was a programme known as Direct Health Facility Financing (DHFF). This new approach allowed plans and budgets to be developed and allocated at a health facility level, and within a health facility budget ceiling. Importunately, the budget and service outputs were tracked to see whether or not the two were compatible.

Planning processes at LGAs level was put clear by the participants who reported that it (planning process) went through two stages. The stages were pre-planning and planning. The two stages were marked as important in the preparation of the CCHP.

Pre-planning was mainly done at least for one or two months before actual planning process. It involves inviting all individuals and organisations that support, cooperate, or work with the LGA in health-related activities. The pre-planning meeting is a forum for members to have the opportunity to provide preliminary inputs to the plans from health facilities. Participants of pre-planning meetings were CHMTs, Council Planning Officers, representatives from the health facilities, and other stakeholders supporting or working with the LGAs such as Engender Health, Deloitte, Marie Stopes, and PSI, to mention but a few.

The pre-planning meeting was usually attended by multiple stakeholders to obtain their inputs on strategic priorities. Based on their inputs, a compilation of the same was made to produce a draft for discussion in the planning meeting. It was also found that in previous planning and budgeting processes, i.e., before the DHFF, the lower health facilities, particularly the dispensaries, prepared their plans and forwarded them to the council. The plans from the lower health facilities were thereby discussed in the pre-planning meeting.

Previously, the dispensaries prepared their plans where they propose what they want to encompass in the plans and submit them to the council. The council considers the submitted plans for discussion in the pre-planning meeting…

Participants highlighted a number of challenges in one of FGDs. The challenges were more revealing in the planning process. These were a lack of capacity and experience of the health facility governing committees at the health centre and dispensary level. In the same way, the hospital boards at council level. Lacking capacity and experience, it resulted in a number of problems, namely inability to determine dispensary priorities, overriding personal preferences and politics. Moreover, there was high demand for health facilities with limited budgets; thus, making it difficult aligning the budgets based on the priorities of the government and the national guidelines. More importantly, the system required each health facility to receive their money in the context whereby the distribution bases (i.e., formula and criteria) were unclear.

Further, in the FGD, it was revealed that some procedures were at times waived or skipped. For example, sometimes the health facility governing committees at health centre and dispensary level were not involved. The purpose was to hasten the planning processes. This happened despite the

national guidelines stipulating the need for involvement of the health facility governing committees at the beginning of planning. The health facility governing committees need to participate at the time activities to include in the plans are discussed and prioritised. Participant experience indicates that the health facility governing committees were involved at the advanced stages of preparing the plans.

… Ideally, they are supposed to be involved from the beginning because we don't know the problems facing the people at the grassroots level, and so, involving them will provide inputs. However, we do involve them in the last stage because they don't have knowledge on planning and as a council we need to plan according to the government priorities which they (governing committees) are not familiar with…

It was found that during health planning the committees and boards were best positioned to represent their communities. This is because they knew the problems faced people at *Mitaa* (Street level). Furthermore, the communities would know what went on in their council through the committees and board members. As it stands, the committees and board members were in essence powerful because they were signatories to plans and health facility accounts. They had powers to question and require the health workers account to them for whatever they did. Despite the powers vested in the committees/boards, the participants put it that they (committees and board members) just rubber-stamped the plans to fulfil the national guidelines stipulations.

In addition, the board members were less informed; consequently, they were incapacitated in decision making. More so, participants agreed that board members were not given priority regarding training to build capacity. The training could help them understand their roles as decision makers at dispensary and health centre levels. One participant shared the experience that they made efforts to empower the health facility governing committees in their district. However, their efforts went in futile because the health workers from the facilities acted as drawbacks to reach board members. This deprived the board members access to information, and therefore, it limited the same to understand what went on in their health facilities.

The health workers block the health facility governing committee to have relevant information…even the assets of the dispensary are not known to them so how can they make follow-up and control?

It was also found that the election of health facility governing committee was not done as required. Elections are supposed to be done after serving for three years; however, it was found in one of the FGDs that the elections are rarely done. It could happen that some board members served for more than twelve (12) years. To add, some health facility governing committee members served in more than one dispensary. One possible explanation for this is that dispensaries and health centres had no budget for holding elections of the committee/board members.

FGD data indicate that planning in health facilities was generally done by Facility Health Management Team as opposed to Facility Governing Committee. The key question was whether the Facility Governing Committee members were actively engaged, and whether their participation in planning meetings had impact. Some FGD participants mentioned that the committee members could not be informed about everything that happened. This is because of their limited understanding of key issues relating to health planning. The story in the quote below reflects the practice in almost all facilities as reported by FGD participants.

Telling a health facility governing committee that we want to buy 'delivery kits' – it is very difficult for them to know what it is and what it is for, so in most cases we plan first then we inform them later…

Another challenge that faced the CCHP planning and budgeting process was how to clearly specify the amount allocated to each health facility. For instance, for a council that has forty (40) health facilities, each submitting its own plan, all of which are later compiled into the CCHP at the council level. it was not easy to trace the budget allocation for each health facility. FGD participants involved in planning at the council level shared their experience that the councils prepared plans assuming that all issues from the health centre and dispensaries would be included in the plan; however, in most cases the plans from the dispensaries were not considered. This was because the council plans were prepared based on the interest of the planners in the council. These include focusing on government priorities, directives, and political party manifestos.

At council level, plans and budgets in most cases reflected the estimates of the previous fiscal year, with minor changes. This means that the plans and budgets were not realistic, and did not reflect the real issues/problems of people and the real needs of dispensaries and health centres. This is because councils were given budget ceilings, and the cost centre for each unit - dispensary, health centres, and hospitals. For instance, if 30% of the budget is allocated for dispensaries and there are 30 dispensaries in the district. The council would decide to distribute the funds to the 30 dispensaries equally. However, the practice was unrealistic because the financial needs of the health facilities within a district were not the same. For instance, doctors' allowance for attending emergency cases and the number of hours of operation were more or less the same. Thus, a dispensary with influx of patients was likely to suffer from limited budget, while a dispensary with a few patients will have more than enough budget. The budgets for the two dispensaries with different scenarios could not be the same, and the community cost centre varied because activities were different.

Sources of Data
Generally, the CCHP is organised into objectives, strategies, interventions, activities to address health priority areas, and indicators to measure progress/performance. There are fourteen (14) health priority areas: maternal, newborn and child health, communicable disease control; non-communicable disease control; treatment and care of neglected tropical diseases and local priorities, environmental health and sanitation, strengthening of organisational structures, and institutional capacities for improved health service management at all levels. Other priorities are social welfare and social protection;

strengthening human resources for health management capacity for improved health services delivery; emergency preparedness and response; traditional and alternative medicine; health promotion; construction, rehabilitation & maintenance of physical infrastructure and repair of medical equipment; and interventions for local priority diseases such as dental, eye care, and nutrition.

In order to prepare a CCHP that captures the fourteen (14)-priority areas, the CHMT should have data relating to the implementation of priority areas from the preceding year. This would allow them to forecast plan and budget for the following year. The data used for planning are supposed to be extracted from DHIS2. Therefore, the word data dominates the rest of this section. It refers data relating to the implementation of the CCHP from the previous year. This would include data on ten most prevalent diseases in the council, the status of human resources, status of client flow and number of patients served.

Regarding the source of data for the preparation of council plans, the findings show mixed results. While the majority of FGD participants (more than 50%) said that the MTUHA focal person provides most of the data, others said that programme coordinators, for example, District Reproductive and Child Health Coordinator and District AIDS Coordinators were the main source of data used for planning.

"...Before the CHMT meeting all members, such as MTUHA focal person and coordinators, must have the relevant data that they will use in the planning activities. The MTUHA focal person, in my view, is more important than any other person in this endeavour".

It was also noted that the data used in the planning processes were usually retrieved from DHIS2, although sometimes the data were obtained from notebooks of the coordinators. Experience from study participants showed that if the health secretary was absent in a meeting, the planning activity would turn difficult. This is because it is them who could trace recorded data from their notebook.

Some FGD participants reported that in most cases they did not prepare benchmarking data in the planning process. This is because they were too occupied with multiple commitments. They felt that the health secretaries, coordinators, and MTUHA focal persons were more responsible for the task.

Let me tell you frankly that there is no 'formal database' here. Most of the data that is used in planning is usually kept in the notebooks, and some data are in clerk's computer. I therefore don't bother to prepare data for planning ... I am very busy with many tasks. I think this can best be taken care of by health secretaries, MTUHA focal person and coordinators.

The respondents reported that the data in the DHIS2 sometimes differed from data that coordinators had. When probed on this, they observed that it was because the quality of data entered into the DHIS2 were unrealistic. Moreover, data were sometimes fabricated to meet political expectations, or to satisfy superiors when they request them (data). As pointed out by one health secretary,

When the malaria cases are high, the Malaria Coordinator at the council or regional level asks why the malaria indicator is so high and sometimes it requires us to 'correct' the figures. So, the coordinator of malaria will reduce the number of malaria cases which implies that the data will be impressive, but not actually reflecting the reality of the situation on the ground. This is done when the available data are realistic but do not meet the system's parameters. For instance, the system is set to accept a certain percent or figure entered. Anything below that will automatically be rejected. That being the case, manipulation in some cases becomes inevitable for the plans to be accepted.

As it stands, the study revealed that data manipulation was rare during the manual system of planning, which was used in the past. It was unlike the most recent introduced online system for preparing the CCHP. Participants observed described that the online system was case very sensitive, at times it required to enter data for one to proceed with the planning process. The majority of FGD participants noted the new system required expenditure to reflect the actual plan in the CCHP. This posed a serious problem to the councils because often the implementation did not reflect the actual plan expectations.

Sometimes in the council we implement what we did not plan, and it is difficult to fill the information that reflects our plan. With the new system, it is possible to see your plan, but you cannot edit or change it, and for this case you must manoeuver the information of expenditures to reflect the plan in the system.

From the evidence above, it can be argued that with the new system (DHFF), the data in DHIS2 has become more important, but completeness and accuracy of data raise concerns for a number of reasons. First, MTUHA, the focal person in FGD indicated that they were sometimes not given data on time, and often data from the dispensaries and health centres were incomplete. Second, the data submitted were sometimes not accurate because health providers were unable to document all patient and/or clients they attend.

The majority of participants further reported that data in hospitals were often worse than data in or from dispensaries. This is because data in hospitals were sometimes complete appropriately. For instance, data in the Outpatient Department (OPD) may mismatch the data in the laboratory information system. It could happen that number of clients appearing attended in the laboratory register is larger than number in the OPD. This is unusual and it affects data quality. According to participants, 'good data', defined here as data that tell what higher authorities and donors want to hear. Thus, the reported data often did inform the reality in the health facilities. Data related to abortion, maternal mortality, and cholera deaths were cited as fabrication-prone form of data. The participants observed that when such data were accurately reported the likelihood was that politicians would be called into attention, and sometimes they did prefer facts.

The participants highlighted they manipulated reports of certain data because some District Medical Officers (DMOs) and Regional Medical Officers (RMOs) were fired because of reports that indicated high levels of disease incidents. They were fired because it was assumed that they were unable to control diseases in the areas of their jurisdiction.

Due to pressure and fear of losing their jobs, some officers

decided not to report new cases of diseases such as cholera or deaths by giving statistics which did not reflect the reality on the ground.

Furthermore, the participants observed that from political pressure and fear to lose job. The reporters at times were obliged to provide false data. For example, diarrhea could be reported as food poisoning. With this information in mind, the majority participants were reluctant to use DHIS2 data in planning.

In view of the above information, the CHMT members did not use the data despite having access to the DHIS2 database. Interestingly, none of them made a little effort to access the DHIS2 data to cross-check the quality of data entered into the system or to download data for use in planning and preparation of various reports. When asked why, they did not provide any reason for their reluctance, and they unanimously consented that the system was easy to use, and it appeared to be important if it was utilised.

More importantly participants were required to submitted data to the system before the 15th of each month to avoid queries from the Central Government (regions and the ministry). On that note, the participants indicated that in their minds had it that the data collected were for 'them' (the higher authorities and donors), and not for the CHMT members, particularly in the planning process at a LGA level as reported in the quote below.

I was not aware if we can use our own data at the health facility to prepare good plans, and make follow up of the staff during supervision. I had a feeling that the data we are collecting are for the higher authorities, and this is the reason that I was not making any sense of data or even asking why there was an increase in something.

The findings indicate that overall, the analysis of data is not done at health facility or at the council level. FGD participants shared their own experiences of not making sense of their data because there was no motivation such as payment of extra duty allowance.

... A medical doctor may attend 100 patients, but data indicate only 15 patients... how can they be paid an extra duty allowance? If the supervisors will be in a position to make analysis of data and use them in their supervision, the likelihood of developing a culture of data use will be high.

Participants in one of the FGDs reported that there were situations where monetary and non-monetary motivation increased their willingness to analyse and use data. They gave an example of a donor funded project where they were given adequate support to analyse data and produce reports. This suggests that efforts towards inculcation of the culture of data analysis and data use for planning purposes need to be supported through motivation of health staff at all levels.

DISCUSSION

The findings in this paper concur with those in previous studies which show that in general, health planning in LGAs is seldom based on available evidence (Mshana *et. al.*, 2007; Maluka *et al.*, 2010; Chitama *et al.*, 2011). The existing literature indicates that planning and budgeting are generally incremental, that is, the current plan and budget are prepared based on the previous with some extrapolation, but epidemiological changes and evidence are rarely factored into the planning process. This often leads to failure in the implementation of plans because they are not realistic.

The findings also indicate a notable deficiency in knowledge and skills among CHMT, Health facility governing Committee and Health Services Boards as one of the key factors compromising use of data for planning at facilities. A study done by Encourage (2012) in England showed that practitioners lacked knowledge in how to analyse data. The same situation has also been reported in Tanzania and Kenya (MEASURE Evaluation, 2018; Anasel, Swai & Masue, 2019). Karuri *et al.*, (2014) observed that health workers had limited skills and competencies in data analysis and interpretation, attributed to lack of training on how to use health information for planning and decision making. Other scholars (Asiimwe, 2016; Anasel, Idda & Masue 2019), argue that poor quality data is normally not used, and failure to use data sustain the existence of poor-quality data. It is through the use of data that we can improve the quality of data. A study by Njoka (2015) reported that lack of trustworthiness of the quality of health data explains why there can be reluctance among facility staff to use data for planning.

Lack of data use culture also hinders the use of data to enhance evidence-based decision making. Behavioral constraints such as poor attitudes towards the decision-making process. Other factors include lack of motivation to use data for decision-making, and lack of incentives and disincentives to use data were factors hindering the use of data in planning. This corroborates with the findings from other scholars (Asiimwe, 2016; Asemahagn, 2017; & Measure Evaluation, 2018).

CONCLUSION

The study sought to describe the process of preparing CCHPs, including the data sources used during planning. We observe the that the CMHTs lacks culture of using data for informed decision making, coupled with low analytical skills.

Results from this study suggest that CHMT should undergo regular training on how to conduct simple data analysis, with particular attention paid to the DHIS2 database. This would improve their data analysis skills and support development of a culture of data use for planning. Using data for planning and decision making, it would lead to improved plans that reflect the reality at health facility at district levels. Training on simple data analysis methods is also recommended for lower-level staff to ensure high quality data gathered, and empower data collectors to understand the

data they are collecting.

Finally, a stronger sense of ownership and accountability among health facility-level staff has to be developed. Particularly, when it comes to data collection, analysis and use. This should be done at all levels of health facilities. We recommend that supportive supervision visits include at least one-day of training on data analysis to facilitate the use of data in planning.

ACKNOWLEDGEMENTS

CONFLICT OF INTERESTS

The authors declare that they do not have any conflict of interest and all contributed equally.

AUTHORS' CONTRIBUTIONS

Mackfallen Gilliad Anasel conceived and designed the study, collect data, analysed the data and wrote the manuscript in consultation with the other author. Idda Swai played roles in data collection, analysis and interpretation and she was involved in drafting and editing the manuscript.

REFERENCES

Anasel, M. G., Swai, I. L., & Masue, O. S. (2019). Creating a Culture of Data Use in Tanzania: Assessing Health Providers' Capacity to Analyze and Use Family Planning Data. Chapel Hill, NC, USA: MEASURE Evaluation, University of North Carolina: https://www.measureevaluation.org/resources/publications/wp-19-232

Anasel, M. G. (2017). Family planning programme implementation: Differences in Contraceptive Prevalence Rates across Local Government Authorities in Tanzania, Vakgroep Bestuursrecht & Bestuurskunde Groningen http://www.rug.nl/research/portal/files/40480908/Complete_thesis.pdf.

Asiimwe, A. K. (2016). Determinants of effective utilization of routine health information within private health facilities in Kampala, Uganda (a thesis work).

Asemahagn, (2017). Determinants of routine health information utiliation at primary healthcare facilities in Western Amhara, Ethiopia. *Cogent Medicine*, 4(1), 1387971.

Braa, J & Sahay, S. (2012), Integrated Health Information Architecture: Power to the Users: Design, Development and Use. Matrix publishers.

Chitama, D., Baltussen, R., Ketting, E., Kamazima, S., Nswilla, A., & Mujinja, P. G. (2011). From papers to practices: district level priority setting processes and criteria for family planning, maternal, newborn and child health interventions in Tanzania. *BMC women's health*, 11(1), 46.

Endriyas, M., Alano, A., Mekonnen, E., Ayele, S., Kelaye, T., Shiferaw, M., & Hailu, S. (2019). Understanding performance data: health management information system data accuracy in Southern Nations Nationalities and People's Region, Ethiopia. *BMC health services research*, 19(1), 1-6.

Freitas, H., Oliveira, M., Jenkins, M., and Popjoy, O. (1998). The Focus Group, a qualitative research method. ISRC, Merrick School of Business, University of Baltimore (MD, EUA), WP ISRC No. 010298, February 1998. 22

Garner, P., Harpham, T. and Annett, H. (1992). Information support for urban primary health care. *World health forum* 13:244-248.

Karuri, J., Waiganjo, P., Orwa, D., &Manya, A. (2014). DHIS2: The Tool to Improve Health Data Demand and Use in Kenya. *Journal of Health Informatics in Developing Countries,* 8(1).

Lungo, J.H., 2008. The reliability and usability of district health information software: case studies from Tanzania. *Tanzania journal of health research*, 10(1), pp.39-45.

Maluka, S., Kamuzora, P., San Sebastián, M., Byskov, J., Ndawi, B., & Hurtig, A. K. (2010). Improving district level health planning and priority setting in Tanzania through implementing accountability for reasonableness framework: perceptions of stakeholders. *BMC health services research*, 10(1), 322.

Measure Evaluation (2018), Strengthening data demand and use in three African countries: Lesson Learned from associate Award in Kenya, South Africa and Tanzania, USAID, North Carolina.

Measure Evaluation. 2018. Assessing Barriers to Data Demand and Use in the Health Sector: A Toolkit. Chapel Hill, NC, USA: MEASURE Evaluation, University of North Carolina.

Measure Evaluation (2018), data demand and information use in the health sector: conceptual framework

Measure Evaluation (2018), Facilitators and Barriers to Data Use: Learning from Measure Evaluation Tanzania Associate Award

Mshana, S., Shemilu, H., Ndawi, B., Momburi, R., Olsen, O. E., Byskov, J., & Martin, D. K. (2007). What do District Health Planners in Tanzania think about improving priority setting using' Accountability for Reasonableness'? BMC *Health Services Research*, 7(1),180.

Njoka, (2015) examined the factors influencing utilization of routine health data in evidence-based decision making by public facilities providing HIV/AIDs treatment services in Nakuru (Thesis work).

Robey, J.M. and Lee, S.H. (1990). Information system development in support of national health programme monitoring and evaluation: the case of Philippines. *World Health Statistics Quarterly* 43:37-43.

The United Republic of Tanzania, Ministry of Health, Community Development, Gender, Elderly and Children, The National Health policy, 2007

The United Republic of Tanzania, Ministry of Health, Community Development, Gender, Elderly and Children, National Guidelines for Health Data Quality Assessment, 2016