

Data use culture for decision making at district level in Ethiopia

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Abstract

Background: Underutilisation of routine health information data for local health system planning and decision-making is common in lower and middle-income countries. One of the reasons for inadequate use of available data at the district level arises from the limited capacity for analysing and interpreting data by local decision-makers. Moreover, district-level decision-makers are often uncertain about the available routine health information system's credibility. To develop an in-depth understanding, this research explored the dynamics of local data-informed decision making from the perspective of current practices, mechanisms and opportunities available to improve data use for decision making at district health system level in Ethiopia.

Methods: Qualitative data were collected from two districts of Ethiopia. The mechanism of data collection was through field observation, district-level workshops and consultations with national, regional and district health representatives. The information was triangulated and synthesised using the World Health Organization health system building block framework.

Results: Key decision-making mechanisms were Performance Monitoring Team meetings, district administrative meeting and community administrative meeting. However, there was limited evidence of local data use for routine district level planning or problem solving. In addition, we found no evidence of stakeholder engagement for collaborative decision-making. On the other hand, extensive and diverse data were available to support decision-making, ranging from health information system data, disease and emergency surveillance data and twenty additional disease or program reports.

Conclusion and Recommendation: Active use of all available health-related data and engagement with local stakeholders such as private health facilities, NGOs and non-health departments are encouraged to streamline the decision-making processes at the district level. As a health system-strengthening strategy, we recommend the district health managers and administrators to work on improving data quality and use for collaborative decision-making in problem-solving. For this, effective use of job aids and technology is of paramount importance to gain from the increasing improving data quality at the district level.

Keywords: Data use, Decision making, Performance Monitoring Team Meeting, Health Management Information System

Introduction

Health Management Information System (HMIS) is designed to provide information to managers at various health system levels on time. It supports and promotes decision-making in policy, management, monitoring, and evaluation of health systems programs and services (USAID 2010). However, in lower and middle-income countries such as Ethiopia, HMIS and other local data are not adequately used to assess health system performance or support planning and decision-making at the district level (Tashobya et al. 2014; Avan et al. 2016; Wickremasinghe et al. 2016). Much is known regarding health system data collection and how to improve data quality (Abajebel et al. 2011) but less has been documented on how the data are used. Although it is known that the data quality is improving (WHO 2018), health-related programs frequently fall short of efficient use of data for decision making. Data are primarily available in databases and reports format and databases and are not sufficiently used to inform program development and

improvement, policy development, strategic planning, or advocacy (Nutley et al. 2013).

Although it is known that the HMIS is the backbone for strong health systems, studies in Sub-Saharan Africa have indicated problems in data quality, including completeness and timeliness, accuracy, consistence and poor utilization of HMIS tools. These bring concerns regarding quality of routine information that undermined data utilization for decision-making in the health sector (Rumisha et al. 2020).

Increased focus on evidence-based public health has numerous direct and indirect benefits of evidence based public health decision making includes; access to higher quality information, likelihood of successful health programs and policies, greater workforce productivity, and more efficient use of public and private resources (Brownson et al. 2013).

Scientific evidence is the basis for improving public health. In developing countries, due to lack of sufficient resources, evidence-based decision-making

is leading to optimize costs and prevent wastes. At the same time, the direct consequence of ignoring evidence is poorer health for the community (Shafaghat et al. 2022).

Despite global recognition of a need for data-informed decision making at the local level to improve health (USAID and Measure Evaluation 2018), little is known on how decision making and data use is accomplished in the health system, at the district level in Ethiopia. Recent technical developments in the computerisation of health information functions, such as District Health Information System (DHIS2), in Ethiopia and elsewhere, have led to improved data quality and flow at different levels of the health system (Karuri et al. 2014). However, in low and middle income countries, health information systems are affected by inadequate data analysis and poor utilization for decision-making (Getachew et al. 2022). Here, we report a qualitative study that explored data use and decision-making processes by the district health administration of Ethiopia in Southern Nations, Nationalities and Peoples' Region (SNNPR). It was aiming to understand the mechanisms of decision making, and explore the experience of use of data generated by HMIS and non-HMIS data reporting systems in existing decision-making at the district level.

Collaborative and structured decision-making within a health system requires stakeholders to reach consensus on a particular health theme in order to address challenges in the management and delivery of health services to the community. For the benefit of the community, the study result was communicated to SNNPR health bureau.

Materials and Methods

Study design: Qualitative method was applied to understand decision-making practices, mechanisms and available data at district health office. Combination of observation, consultation, interview, document review and workshops were used.

Study settings: SNNPR was selected for the study due to its diversity in terms of urban and rural districts. Based on discussions with the head of Policy, Planning, Monitoring & Evaluation of SNNPR regional health bureau; and the heads of two zonal health departments, two districts were selected including one "low-performing" and one "high-performing". The district health offices performance was determined by coverage of skilled delivery, antenatal care fourth visit, prevention of mother-to-child transmission of HIV, syphilis, postnatal care, Penta 1 and 3 vaccines, family planning, tuberculosis cure rate and, improved latrine reforms plans compared to performance at the end of 2010 Ethiopian fiscal year.

Accordingly, to understand district health offices data use experience for decision making from Wolaita Zone, 2010 Ethiopian fiscal year high performer Sodo Zuria District Health Office; and from Kembata Tembaro Zone, the fiscal year lower performer Hadero District Health Office were selected for this study

Data collection: The study was conducted from August to December 2018, and data were collected from Ministry of Health (Monitoring and evaluation managers, data managers, heads of policy and planning, monitoring and evaluation experts and HMIS technical specialists); SNNPR (heads of policy and planning, UNICEF and JSI experts), district health offices (Head, HMIS focal person, MCH team lead and planning head). In addition, at the two selected districts group meetings, document review and observation were carried out. At the end district-level workshop was organised to understand their challenges and opportunities of data-based decision-making processes.

The consultations were conducted using semi-structured interviews. The themes were: established opportunities for decision making at the district level, the mechanisms of decision making within routine meetings, the type of data collected at the district level, status of data use at the district level, and feedback to improve the system of data use. The main theme of the workshop was understanding decision-making processes using available data. Discussion among participants was recorded through detailed documentation of the proceedings.

Data Analysis: The data were coded and analysed via a two-tiered process. At the first level of coding, distinct concepts and categories in the data, to form the basic units of analysis were searched. It was carried out by reviewing the notes and identifying key emerging themes, such as regular meetings, type of data collected at district level, experience of data use at district level and feedback to improve data use. For the second level of coding, repeated close scrutiny of the notes was conducted to identify patterns within the emerging themes. The first and second level themes generated through this process were subjected to repeat cross checking. Finally, the findings were triangulated with evidence from the direct observation and workshop discussions.

Results

This section displayed study findings organised by three objectives related to decision-making mechanisms, experience of data availability from HMIS and non-HMIS data reporting system; and data use within existing decision making.

Mechanisms of decision making at the district level:

At the district level, five forums were identified as the primary decision-making meetings conducted by the health administration:

1. **Performance Monitoring Team (PMT) meeting:** The PMT is a team of multidisciplinary health management staff responsible for improving data quality and using information regularly to monitor progress and improve performance. Ensuring data quality and continuous use of the information will improve access, utilisation, coverage and quality of health services (Rumisha et al. 2020). This meeting held monthly with 10 to 14 participants and chaired by the district health office head.
2. **District Council meeting:** This meeting aimed to evaluate a district's performance; a district's performance, including health on a monthly, quarterly, and annual basis. Participants include representatives of government sectors, council members, community members and women's development army members.
3. **HMIS data quality review meeting:** This quarterly meeting aimed to assess data quality within the district. Participants include HMIS focal persons.
4. **Command-post meeting:** These weekly general management meetings include a broad range of stakeholders, including community representatives, district heads, community health workers representatives, and community core process heads (e.g. agriculture, taxation) from the district health offices.
5. **Performance Review Team meeting:** These health-specific meetings held monthly, quarterly, and annually. On a monthly and quarterly basis, meetings were conducted to update on the performance by districts. During the annual meeting, target setting and yearly performance are reviewed. Participants include the district heads, Non-Governmental Organisations (NGOs), women's groups etc. with 70 to 100 participants.

Overall, the focus of the PMT meeting was to assure results-based monitoring and evidence-based administrative and clinical decision making for improving the health sector's performance in line with

the district plan. At council meetings, the health department's performance was evaluated by other government sectors in the district, including council members and community representatives. The HMIS data quality review meetings were conducted to ensure timeliness, completeness, credibility, relevance, ease of understanding and accuracy of data collected at the district level. The performance review meeting aimed for problem solving and decision making related to target setting and its performance. Finally, command-post meetings aimed to prepare a weekly plan for urgent health-related problems or activities that need particular attention by community representatives, health extension workers, and district health office core process heads.

Experience of HMIS and non-HMIS data reporting systems in terms of data availability: Both HMIS and non-HMIS data reports were generated at the district level to produce essential indicators for health. The well-established information systems at the district level include:

- a) Health service and emergency data, which was collected monthly through HMIS from health centres, health posts, private clinics and NGOs,
- b) Drug and equipment data collected monthly by pharmacists at health posts and health centre using logistical management information system (LMIS),
- c) Performance of district development army through community health information system (CHIS) from health posts and
- d) Proportion of the population insured and of the population under five were collected quarterly by community insurance and demography reports, respectively.

However, certain indicators for vertical programs were not integrated into the HMIS through District Health Information System (DHIS2), for instance diarrhoea or anaemia under integrated community case management (iCCM), nutrition (Outpatient Therapeutic Program, Stabilisation centre, Vitamin A and Deworming disaggregated by dose and age), disease-specific reporting (TB, Malaria), community health activities etc. Consequently, non-HMIS reporting of health programmes is common at the district level. The workshop participants identified about twenty non-HMIS reports (Table 1). Even though these reports were regularly generated monthly or quarterly, they were usually not used at district decision-making.

Table 1: Non-HMIS reports at district level by frequency of reporting, thematic area and World Health Organization health system building block

No	Non-HMIS Reports	Frequency	Theme	Health system building block
1.	Nutrition	Monthly	- Outpatient Therapeutic Program - Stabilisation centre - Health Extension Program - Vitamin A distribution - Deworming - Screening - Community Based Nutrition	Service delivery
2.	Pregnant Women Forum	Monthly	- Focused Antenatal Care - Skilled Birth attendance	
3.	Tuberculosis	Monthly/ Quarterly	- Examined for TB - Suspected and Referred for TB - Diagnosed for TB	
4.	Malaria	Monthly	- Visited households for Long Lasting Treated Nets Use - Number of households found using Long Lasting Treated Nets	
5.	Hygiene & Sanitation	Quarterly	- Access and Utilisation of Latrine (Private/Public)	
6.	Integrated Community Case Management/ Community Based New-born Care	Monthly	- Pneumonia - Malaria - Diarrhea - Malnutrition - Sepsis - Identification of pregnant women - Postnatal care - Anemia	
7.	Quality Improvement	Monthly/ Quarterly	- Standardising the Service delivery	
8.	Ambulance service report	Quarterly	- Ambulance service Report	
9.	Regulatory Report	Monthly	- Standardise Public and Private Health-Related facilities	
10.	Clean and Safe Health facility	Quarterly	- General facility level cleanliness - Waste material management	
11.	Public Health Emergency Management (PHEM)	Weekly	- Reportable Diseases - Epidemics	Leadership/ Governance
12.	Key Performance Indicator	Monthly/ Quarterly	- 31 indicators	
13.	Ethiopian Health Centres Reform Implementation Guideline	Quarterly	- 10 chapters and 81 standards	
14.	Good governance	Quarterly	- Community participation	
15.	Compassionate Respectful and Caring	Quarterly	- Professional Ethics	
16.	Public forum report	Quarterly	- Empower the Community	Financing
17.	Health Development Army (HDA)	Quarterly	- Evaluation of 1 to 5 network and members	
18.	Community scorecard	Quarterly	- Empower the Community to evaluate Health Facility and Health professionals - Health Development Army at Kebele level	
19.	Health care financing (revenue)	Monthly	- Budget utilisation Revenue retention and utilisation	
20.	Community-based health insurance	Quarterly	- Participating in the Community for Health Insurance	

Thematically, the non-HMIS reports offer data on a wide range of the essential indicators, beyond HMIS, such as *Maternal and Child health* (Integrated Child Care Management/ Community Based New-born Care (iCCM/CBNC); Pregnant Women Forum; *Infectious diseases* (Tuberculosis, Malaria, Public Health Emergency Management); *Leadership/Governance* (Key Performance Indicator); Ethiopian Health Centres Reform Implementation Guideline; Good governance; Compassionate, Respectful and Caring; *Financing* (Health care financing revenue); *Community participation* (Public forum report, Community scorecard, Community based health insurance, Health Development Army); *Service quality* (Quality Improvement, Regulatory Report, Clean and Safe Health facility) and *other service-specific indicators* (Nutrition, Hygiene and Sanitation, Ambulance service report)

Data use within existing district decision making:

Among the five main meetings conducted at the district level, the PMT meeting was identified as the primary decision-making forum from the perspective of the health system and services management. The PMT meeting gave an overview of the performance of every facility, relying mainly on HMIS data and comparing it with targets set at district level. The meeting participants also look for performance gaps and assign 'good', 'medium' and 'poor' performance scores for their district by considering different indicators as per a Balanced Score Card approach.

Although there was information on PMT Meeting guidelines and standardisation of ledger books at the national level, no such evidence was practically available at the district level.

In the high performing district, the PMT meeting took place almost every month, in contrast to the low performing district. In addition, in the high-performing district, meeting proceedings were recorded manually, action plans were developed to improve performance and decisions were adequately followed up. However, the private sector or NGOs did not participate in these decision-making meetings despite their considerable contribution to service delivery at the local level.

Based on the individual consultations and workshop discussions, following key support activities were identified to improve the existing PMT meeting.

a. **Capacity development:** Skills training should be given to the district health office responsible persons on how to conduct monthly PMT meetings. The reporting format from facilities to district health offices needs to be clarified. Without this, analysis remains challenging. Therefore, further training need

was identified for primary health care to ensure completion of the reporting formats, which were supposed to be filled and sent to district health office on time correctly.

b. **Diverse stakeholders' engagement:** The private sector and NGOs representatives could be brought into PMT meetings to enable their expertise and resources to solve local health service problems collectively.

c. **Infrastructure for data management:** Although all districts reported as they had at least one computer for DHIS2, there was also a general lack of knowledge to use the available data software packages, internet access, electric power, transportation and finance for field work

Discussion

Overall, it was found that the data used for health decision making at the district level is very low. However, existing systems potentially offer multiple data sources and management forums to improve data use practices for problem-solving and health services. Among the five existing forums, the district, PMT meeting offers the maximum potential to improve the use of local data in decision-making. The national, regional and district level stakeholders consistently highlighted the PMT meeting as having strong potential to solve local health problems using local data sources, if supported by necessary capacity building and technical resources.

Similar research evidence was reported in the Sub-Saharan context (Mozambique, Rwanda, and Zambia) (Gimbel et al. 2017) where the forum like PMT meetings have the potential to effectively unify health system at the district, facility, and community level by focusing needs assessment and improvement plans.

HMIS and non-HMIS data reporting system

Data on disease, health services and emergency have been collected mainly through HMIS. Health management information systems produce large amounts of data that are mainly used locally for health decision-making in many low and middle-income countries. Some key Program indicators such as integrated Community Case Management (iCCM), nutrition, disease-specific and community health activities are not included by HMIS and are captured through non-HMIS reports. At least twenty non-HMIS reports in Ethiopia that generate program indicators and can be useful for decision-making at the district level were identified.

Furthermore, the health management information system; logistical management information system, community health information system, community insurance, and non-HMIS reports were identified as the key data sources that were significantly

underutilised in the local decision-making process. Besides, availability and access of private health sectors data in the public health information system can improve health outcomes by providing more comprehensive mapping of the health sector, enabling better health systems planning (Sood et al. 2011).

Data use for decision-making: Local data utilisation for improving health system and services was negligible despite data regularly available from diverse sources. To some extent, PMT meetings utilises HMIS data for the local decision-making, without any consideration for the other locally available valuable data sources.

Well-designed data management systems, combined with appropriate skills, adequate local resources, and effective standard operating procedures, are the most critical factors in ensuring information use. There is a strong probability that data could be effectively used for informed decision making if the information system can provide comprehensive data access with good analytics to the district administration.

A study at Mombasa county of Kenya revealed that very little information is used by those collecting data, local health management. The possible factors for not using the collected data were technical shortcomings (lack of skills/training, competency), organisational (infrastructure, roles & responsibility, supervision, feedback) and behavioural (attitude/values/perception, motivation) (Gilbert 2017). The study findings strongly resonate with the need for capacity development and necessitate innovative approaches to build system strategies and procedures, which will help district health managers in effective decision-making. Similarly, another study in Zambia pointed out the need of considering other information systems outside HMIS, which is existed in the district health system. As a solution, HMIS need to consider the nature of the information gap which is coming to fill in the district health organisation (Mutemwa 2006).

Conclusion and recommendations

To strengthen data-driven decision making for low and middle-income countries and especially in Ethiopia, existing decision-making meetings such as PMT meeting and existing routine data have synergistic potential to improve data-driven decision making at the district level. For sustainable change towards comprehensive local planning and problem solving, all stakeholders should be included, and both training and on-job resources made available.

Limitations

Findings from one higher and one lower performing districts may fall short of reflecting the real picture at national level. Results must therefore be interpreted

cautiously. However, the districts were selected for in-depth research in consultation with the relevant national and regional government authorities to minimise bias. In addition, our premise and phenomenon of interest were specific to the district's administration, i.e. the specified meetings and possible HMIS and other data use at the district level. However, data-driven decision-making is linked across all the health systems- from community to national levels. Therefore, future study at national-level is warranted to comprehensively understand the challenges. .

Ethical approval and consent to participate: EPHI and LSHTM IRB ethically approved this study, which is part of DIPH project with Reference Number EPHI 6-13/194 and LSHTM 17578; respectively

Competing interests: The authors declare that they don't have competing interest.

Acknowledgements: We would like to thank Ministry of Health, and Southern Nations, Nationalities and People's Regional Health Bureau of Ethiopia for facilitating to get information for this study. We also thank Bill and Melinda Gates Foundation for financial support required to execute the work.

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