# Assessing the existing e-health system functionalities towards digitization and integration

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**Abstract**

**Background:** Cognizant of overall limited use of functionalities of information systems in general compared to the available features, this research project is motivated to investigate the level of use of DHIS2 system functionalities. By determining the functionalities being used and unused it is possible to identifying gaps and potential interventions for improvement. Understanding the level of knowledge and extent of use of DHIS2 functionalities with the intent of improving use of the system for better digitization of the health data is the central agenda in this project. Thus, the objective of this research is to assess use of the existing e-health system functionality towards digitization and integration.

**Methods:** A qualitative study was employed to investigate the level of use of functionalities and identify gaps for improvement. Three health centers from three sub cities were the study sites while health information technicians and health decision makers were study participants. Data for examining the system under study is obtained using two methods, namely, interviewing and observation. A two-page interview guide consisting of 22 items in five categories was employed. For the observation, numerous detail FUNCTIONS /FEATURES of DHIS 2 under 33 major functionalities were observed at three selected health centers. An ODK tool and Google forms were used to facilitate data collection and analysis. Though four structured interviews were planned in each health center which will make a total of 12 interviews, numerous further interview sessions were conducted to clarify ambiguous issues and get further details.

**Results:** Findings showed that only few of the major and sub functionalities of DHIS2 were utilized currently and needs future actions to enhance system usability. In line with this, there are major functionalities are not even known by the system users. Thus, it is easy to learn that an appropriate intervention should be designed to fill the gaps observed in the next implementation strategy.

**Conclusion:** Assessing health system functionalities enables proper understanding of the level of system use at health centers. Good knowledge of the extent of use will in turn direct appropriate action in facilitating digitization and integration of health systems. The gaps identified through this empirical investigation in system functionality use will be addressed in the subsequent interventions planed. [*Ethiop. J. Health Dev.* 2021; 35(SI-1):66-75]

## Background

The health system of the Federal Democratic Republic of Ethiopia is guided by Health Sector Transformation Plan which is implemented through a series of five-year health sector transformation plan (HSTP). Currently, the country is implementing the Health Sector Transformation Plan II (HSTP II) 2020/21-2024/25 which align with international commitments [1]. The health sector in Ethiopia has shown remarkable progress involving several health, nutrition, and population indicators over the last decade; however, the sector is not fully supported by technology.

By combining technology and the genomic revolution, digital health is empowering us to track, manage and improve our own and our family's health and care environments, leading to greater independence and improved health outcomes. The use of modern technologies and digital services is not only changing the way we communicate, but they also offer us more innovative ways for monitoring our health and well-being, giving us greater access to personal data for self-management.

Together these advancements lead us to a convergence of information, technology, people, and connectivity which can improve health and care outcomes. By innovating in digital health and care, we can support our ambition towards reducing inefficiencies in healthcare delivery, reducing costs, improving access, and increasing quality of care, making our health services more person-centered and personalizing medicine for each patient's unique needs.

Aligned with the ambitions, action is needed to define the components of health system digitalization and pathways to achieve success; to provide technical and policy guidance; to offer innovative support around digital health challenges; to advocate for stronger links between digital health and public and population health objectives; and to align the work of digital health partners inside and outside the health sector [2].

According to WHO, eHealth is the use of information and communication technologies (ICT) for health. E-health involves a large group of activities which uses electronic means to deliver health-related information, services and resources [3]. In terms of scope, though e-health systems are a wide concept covering many aspects, this sub-thematic research focus on a basic element of this e-health system which is DHIS2. These days, ICT is used to support electronic gathering, storing, processing, and exchanging of information to treat disease, promote healthy lifestyle, prevent illness, manage patients with chronic illness, and many other applications [4].

One can easily understand that a common problem facing in today's health sectors are that of multiple, dissimilar information sources and repositories, including databases, object stores, knowledge bases,

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file systems, digital libraries, information retrieval systems and electronic mail systems [5]. The integration of these systems is limited in Africa, thereby resulting in fragmented silo systems and a lot of duplication of functionality across departments. Decision makers often need information from multiple sources but are unable to obtain and combine the required information in a timely fashion due to the difficulties of accessing the different fragmented systems.

Recognizing the fact that a good number of functionalities may not be in use in most systems, through this sub thematic research attempt is made to investigate the level of use of DHIS2 system functionalities and how the use of more functionalities of DHIS2 be enhanced.

The research particularly focusses on DHIS2 at the selected health centers in Addis Ababa. The research used two data collection method, interview, and observation, which are appropriate to achieve all stated objectives of the research. Then gaps in the use of DHIS2 functionalities were identified, and all stakeholders were involved in verification of the identified gap. Following those two interventions were designed to foster use of more functionality.
From the outset the research project was designed to address the following two research questions.

- What is the knowledge and level of use of DHIS2 system functionalities?
- How can the use of more functionalities of DHIS 2 be enhance?

**Objectives**
The general objective of this research project is to assess the existing DHIS2 functionality as a case of the e-health system towards digitization and integration. Specific objectives are.

- To examine the existing DHIS2 in terms of functionality, and
- To pinpoint gaps in the e-health system (taking DHIS2 as a case) with respective to use of features and functionalities available

**Methodology**
Generally, the study follows a qualitative research design to understand the level of knowledge and use of DHIS2 functionalities by users. Though it is generally qualitative research, attempt is made to quantify some of the results for the purpose of easy understanding. The following subsections provide details of methods used to conduct the research.

**Description of Study area and sampling**
This sub- thematic research is conducted on three sub cities of Addis Ababa city, selected randomly from three categories of sub cities in terms of their maturity level regarding e-health systems adoption. Accordingly, 3 purposefully selected health centers, namely, Maichew, Kazanchis and Addis Ketema from Gullele, Kirkos and Addis Ketema sub cities respectively were the study sites. It is known that Health Information Technicians (HITs) are at the center of this system, as the main users as well as mediators of use of the system by others such as health professionals. They are responsible for data entry and reporting using the system. Accordingly, they are the main respondents of this research. While HIT experts working on the available health systems are the major target respondents the study also included Medical Directors and Core process owners at the health centers. Though saturation point will determine sample size in qualitative studies, based on preliminary assessment 12 experts (4 from each health center) were involved in this study. The experts as has been mentioned above were identified purposefully based on their role on DHIS2.

**Data Collection Methods**
Data collection is one of the important tasks to analyze how activities done in the existing DHIS2. Data was collected in English language as the respondents were first degree holders and above. Data for examining the system under study was obtained using two methods, namely, interview and observation. They are the two most widely used methods of collecting qualitative data, which make them appropriate for identifying extent of knowledge and use of functionalities of DHIS2 in this research. A two-page interview guide consisting of 22 items in five categories was employed. For the observation, numerous detail FUNCTIONS /FEATURES of DHIS2 under 33 major functionalities were observed at the selected health centers. An ODK tool and Google form were used to facilitate data collection and analysis.

Accordingly, four structured interviews were conducted in each health center which will make a total of 12 interviews. Actually, numerous further interview sessions were conducted to clarify ambiguous issues and get further details. Interview guide questions were developed in line with the specific objectives and based on Yale University's system functionality/usability evaluation questions. The questions were further validated with the HITs for appropriateness.

As a second method, observation was used. Though there is a possibility to conduct both **participant observation** in which case, the researchers will make themselves part of the community that they are observing and **direct observation,** which is a more focused, as the researchers often call in their subjects and observe them for a specified amount of time, a **direct observation** is preferred in this research. Thus, investigators conduct the observation on what HITs are doing in their day-to-day tasks while accomplishing their job. On average, 11 observations were made for each major module. The purpose of the observation was to check and ascertain the use of system features by HITs. We learned that HITs are trained on the system and have an average of three years of experience on the system. Observation checklist was prepared based on the DHIS2 end user manual.

Regarding data collection procedure, after a half day training and discussion on the data collection instruments, both data collectors and supervisors were ready for the task. Following those three data collectors and three supervisors participated in the current

research project. Supervisors were highly involved in the data collection in addition to guiding the data collection. This is very much common in qualitative data collection. The data collection was conducted for 15 days between May 21, 2020, and June 05, 2020. While the observation was conducted on the use of 343 features of the selected system, numerous interview sessions were conducted to get an in-depth understanding of the functionalities being used and challenges related to that.

**Data Analysis approach**

Descriptive statistics through percentage and graphical representation of responses were made to extract valuable information from the data collected through observation. Data collected through interview was analyzed thematically to identify challenges and non-usable function of the system. Further, this will be used in the design of the interventions required.

**Ethical clearance**

Research clearance typically involves an ethical clearance committee looking at the research aims and methodologies of researchers to make sure that the research will be conducted in a way that protects the dignity, rights, and safety of the research participants, and that the research design is ethically sound and is likely to render the anticipated results [8]. Ethical approval of this research was obtained from the research committee of the college of Health Sciences at Addis Ababa university. This is important for those making decisions based on the research results.

**Results**

This section presents key findings of the research process. As reported in earlier sections, the data collection was conducted successfully and a summary of results and findings guiding the subsequent steps of intervention is presented below. For ease of presentation findings from the observation and interview are presented separately**.**

**Findings from the Observation**

As per our observation checklist, response was obtained from each HIT expert from the selected health centers. As a result, we have obtained relevant information in relation to DHIS2 functionalities / features. The observation checklist comprises of 33 major functionalities and 343 sub functionalities of the system. Three HITs, one from each health center who took required training on DHIS2 with average experience of three years were involved on the observation process. The highest experience observed is 5 years while the least is a year and half.

We measured the knowledge and extent of use within four alternatives, namely, *does not know its availability, never, sometimes, and always.* Based on the results, the following high-level summary was made. Thus, the knowledge and extent of use of DHIS2 functionalities at selected health centers is presented separately which is followed by a comparison of the findings of the three selected health centers.

**DHIS2 use at Maichew Health Center**

Per the research design a direct observation on the use of the detail system functionalities was made and recorded. Summary of observation results on the extent of knowledge and use of major functionalities of DHIS2 at Maichew Health center is presented in Table 1 below. The first column of the table presents major modules/functionalities of the system under study while the remining show the percentage of sub-functionalities known and/or being used by the system users. As can be seen from the table, most functionalities are known to the HITs but their use is limited in general. Functionalities like messaging, data analysis, routine data entry, reporting functionalities, and import/export are mostly used. On the other hand, there are functionalities like Manage Users, User Roles and User Groups, Meta data configuration, and scheduling.

Table 1: **knowledge and extent of use of DHIS2 functionalities at Maichew health center**

| Major module/Functionality | Do not know its availability | Never used it | Sometimes use it | Always use it |
|---|---|---|---|---|
| Managing Dashboard | | 70% | 10% | 20% |
| Messaging | | | 60% | 40% |
| Diseases Registration | | 33.3% | 44.4% | 22.2% |
| Data Entry App | | 25% | 25% | 50% |
| Routine Data Entry | | 10% | 40% | 50% |
| Using the tracker capture app | 88.9% | 11.1% | | |
| Using the capture App | | 44.4% | 22.2% | 33.3% |
| Analyze data in Pivot App | | 16.7% | 33.3% | 50% |
| Using the data Visualize App | | 37.5% | 50% | 12.5% |
| Using the Map App | | 100% | | |
| Using the Event Reports App | | 28.5% | 71.5% | |
| Using the event Visualize App | | 33.33% | 66.66% | |
| Control data quality | | 75% | 25% | |
| Data Approval | | 71.52% | | 28.5% |
| Using Reporting functionality in the report's app | | 20% | 40% | 40% |
| User Account preferences | | 100% | | |
| Manage users, user roles and user groups | | 100% | | |
| Visualize usage statistics | | | 100% | |
| Configure Metadata | | 100% | | |
| Configure programs in the maintenance App | | 100% | | |
| About sharing of Objects | | 100% | | |
| Data Administration | | 37.5% | 50% | 12.5% |
| Scheduling | | 100% | | |
| Data Store manger | | 100% | | |
| Configure the Maps App | | | 100% | |
| Configure report functionality | | 22.2% | 55.5% | 22.2% |
| Import / Export App | | | 50% | 50% |
| Configure metadata synchronizing | | 100% | | |
| DHIS2 Mobile | | 66.6% | 33.3% | |
| DHIS2 Tutorials | | 50% | 50% | |
| Demo Server live package and database design | | 20% | 40% | 40% |
| Data Dimensions | | 12.5% | 25% | 62.5% |
| Others | 100% | | | |
| System Setting | 30% | 50% | 20% | |

**DHIS2 use at Addis Ketema Health Center**

Similar to the previous HC, a direct observation on the use of the detail system functionalities was made and recorded at Addis Ketema Health Center. Summary of knowledge and extent of use of DHIS2 functionalities at Addis Ketema health center from the observation data is captured in Table 2 below. The first column of the table presents major modules/functionalities of the system under study while the remining show the percentage of sub-functionalities known and/or being used by the system users. Accordingly, the result shows that a good number of functionalities are not known to the HIT experts. There are also good number of specific functionalities frequently being used.

It is clear from the display above that, features like Using the data Visualize and report App, visualize usage statistics, diseases registration, Using Reporting functionality in the report's app were among the most widely used functionalities in a daily basis. In another way, DHIS2 Tutorials, using the capture App, Control data quality, Data Store manager were among features HIT experts knows their existence but never tried it before. As per the results functionalities related Messaging, using the tracker app, data approval and User Account preferences were not known their availability by the respondents.

Table 2: **knowledge and extent of use of DHIS2 functionalities at Addis Ketema health center**

| Major module/Functionality | Do not know its availability | Never used it | Sometimes use it | Always use it |
|---|---|---|---|---|
| Managing Dashboard | | 70% | 10% | 20% |
| Messaging | 100% | | | |
| Diseases Registration | | 20% | 20% | 60% |
| Data Entry App | | 25% | 25% | 50% |
| Routine Data Entry | | 10% | 40% | 50% |
| Using the tracker capture app | 94.5% | 5.5% | | |
| Using the capture App | | 88.88% | | 11.1% |
| Analyze data in Pivot App | 16.66% | 16.66% | | 66.66% |
| Using the data Visualize App | | 12.5% | | 87.5% |
| Using the Map App | 50% | 50% | | |
| Using the Event Reports App | | | | 100% |
| Using the event Visualize App | | | | 100% |
| Control data quality | | 100% | | |
| Data Approval | 100% | | | |
| Using Reporting functionality in the report's app | | 10% | | 80% |
| User Account preferences | 100% | | | |
| Manage users, user roles and user groups | 100% | | | |
| Visualize usage statistics | | | | 100% |
| Configure Metadata | 25% | 31.25% | | 43.75% |
| Configure programs in the maintenance App | 58.33% | 16.66% | 25% | |
| About sharing of Objects | | | 25% | 75% |
| Data Administration | 25% | 25% | 12.5% | 37.5% |
| Scheduling | 100% | | | |
| Data Store manger | | 71.4% | | 28.57% |
| Configure the Maps App | 100% | | | |
| Configure report functionality | | 44.5 | | 55.5% |
| Import / Export App | | | | 100% |
| Configure metadata synchronizing | 100% | | | |
| DHIS2 Mobile | 100% | | | |
| DHIS2 Tutorials | | 100% | | |
| Demo Server live package and database design | | 20% | | 80% |
| Data Dimensions | | 37.5% | | 62.5% |
| Others | | 100% | | |
| System Setting | | 70% | 30% | |

**DHIS2 use at Kazanchis Health Center**

Results recorded through direct observation regrading knowledge and extent of use of DHIS2 functionalities at Kazanchis health center is presented in Table 3 below. As can be seen from the table above, most of the functionalities mentioned were known by HIT experts of the health center but they do not use them currently. Managing dashboard, configure reports functionality and data entry are the widely used features in a frequent way. Managing Message and Manage Users, Using the data visualizer app and User Roles and User Groups are features not used by HIT experts even if they know they exist on the system.

Table 3: **knowledge and extent of use of DHIS2 functionalities at Kazanchis health center**

| **Major module/Functionality** | **Do not know its availability** | **Never used it** | **Sometimes use it** | **Always use it** |
|---|---|---|---|---|
| Managing Dashboard | | | 10% | 90% |
| Messaging | | 80% | 20% | |
| Diseases Registration | | 11.11% | 22.22% | 66.67% |
| Data Entry App | | 12.5% | 50% | 37.5% |
| Routine Data Entry | | 10% | 30% | 60% |
| Using the tracker capture app | 11.11% | 77.77% | 5.56% | 5.56% |
| Using the capture App | | 33.33% | 66.67% | |
| Analyze data in Pivot App | | 16.67% | 83.33% | |
| Using the data Visualize App | | 75% | 25% | |
| Using the Map App | | 57.14% | 42.86% | |
| Using the Event Reports App | | | 85.71% | 14.29% |
| Using the event Visualize App | 11.11% | 11.11% | 22.22% | 55.56% |
| Control data quality | | | 100% | |
| Data Approval | | | 85.7% | 14.3% |
| Using Reporting functionality in the report's app | | | | 100% |
| User Account preferences | | 100% | | |
| Manage users, user roles and user groups | | 100% | | |
| Visualize usage statistics | | | 100% | |
| Configure Metadata | | 56.25% | 43.75% | |
| Configure programs in the maintenance App | | 16.67% | 33.33% | 50% |
| About sharing of Objects | | | 50% | 50% |
| Data Administration | | 37.5% | 12.5% | 50% |
| Scheduling | | 100% | | |
| Data Store manger | | 85.71% | 14.29% | |
| Configure the Maps App | | 100% | | |
| Configure report functionality | | 11.11% | 33.33% | 55.56% |
| Import / Export App | | | | 100% |
| Configure metadata synchronizing | | 56.25% | 43.75% | |
| DHIS2 Mobile | | 100% | | |
| DHIS2 Tutorials | | 100% | | |
| Demo Server live package and database design | | | 20% | 80% |
| Data Dimensions | | 50% | 50% | |
| Others | | 60% | 40% | |
| System Setting | | 50% | 50% | |

**DHIS2 use at the selected health centers**

Following the above results regarding functionality use at each health center, this subsection presents consolidated findings of functionality use at all health centers. Accordingly, as can be seen from table below (Table 4), a good number of functionalities were not known by the HITs who are using the system. But it is worth mentioning that the three most widely used modules from DHIS2 are Import / Export App, Reporting functionality in the report's app and Routine Data Entry features.

Table 4: **knowledge and extent of use of DHIS2 functionalities at all studied health centers**

| Major module/Functionality | Do not know its availability | Never used it | Sometimes use it | Always use it |
|---|---|---|---|---|
| Managing Dashboard | | 46.67% | 10% | 43.33% |
| Messaging | 33.33% | 26.67% | 26.67% | 13.33% |
| Diseases Registration | | 21.48% | 28.87% | 49.6% |
| Data Entry App | | 20.83% | 33.33% | 45.83% |
| Routine Data Entry | | 10% | 36.67% | 53.33% |
| Using the tracker capture app | 64.83% | 31.46% | 1.85% | 1.85% |
| Using the capture App | | 55.54% | 29.63% | 14.81% |
| Analyze data in Pivot App | 5.55% | 16.68% | 38.89% | 38.89% |
| Using the data Visualize App | | 41.67% | 25.0% | 33.33% |
| Using the Map App | | 82.01% | 14.29% | 3.70% |
| Using the Event Reports App | | 9.50% | 52.40% | 38.10% |
| Using the event Visualize App | 3.70% | 14.82% | 29.63 | 51.85% |
| Control data quality | | 58.33% | 41.67 | |
| Data Approval | 33.33% | 23.83% | 28.57 | 14.27% |
| Using Reporting functionality in the report's app | | 13.33% | 13.33% | 73.33% |
| User Account preferences | 33.33% | 66.67% | | |
| Manage users, user roles and user groups | 33.33% | 66.67% | | |
| Visualize usage statistics | | | 66.67% | 33.33% |
| Configure Metadata | 8.33% | 62.50% | 14.58% | 14.58% |
| Configure programs in the maintenance App | 19.44% | 44.45% | 19.44% | 16.67% |
| About sharing of Objects | | 33.33% | 25.0% | 41.67% |
| Data Administration | 8.33% | 33.33 | 25% | 33.33% |
| Scheduling | 33.33% | 66.67 | | |
| Data Store manger | | 85.70% | 4.76% | 9.52% |
| Configure the Maps App | 33.33% | 33.33% | 33.33% | |
| Configure report functionality | | 25.95% | 29.61% | 44.43% |
| Import / Export App | | | 16.67% | 83.33% |
| Configure metadata synchronizing | 33.33% | 52.08% | 14.58% | |
| DHIS2 Mobile | 33.33% | 55.55% | 11.11% | |
| DHIS2 Tutorials | | 83.33% | 16.67% | |
| Demo Server live package and database design | | 13.33% | 20.0% | 66.67% |
| Data Dimensions | | 33.33% | 25% | 66.67% |
| Others | 33.33% | 53.33% | 13.33% | |
| System Setting | 10% | 56.67% | 33.33% | |

Figures 4 and 5 below also show comparison of knowledge and extent of use of DHIS2 functionality at the three health centers. It can be seen that Addis Ketema health center is found better in terms of using available functionalities, while all the three health centers are almost equal in terms of unused but known functionalities.

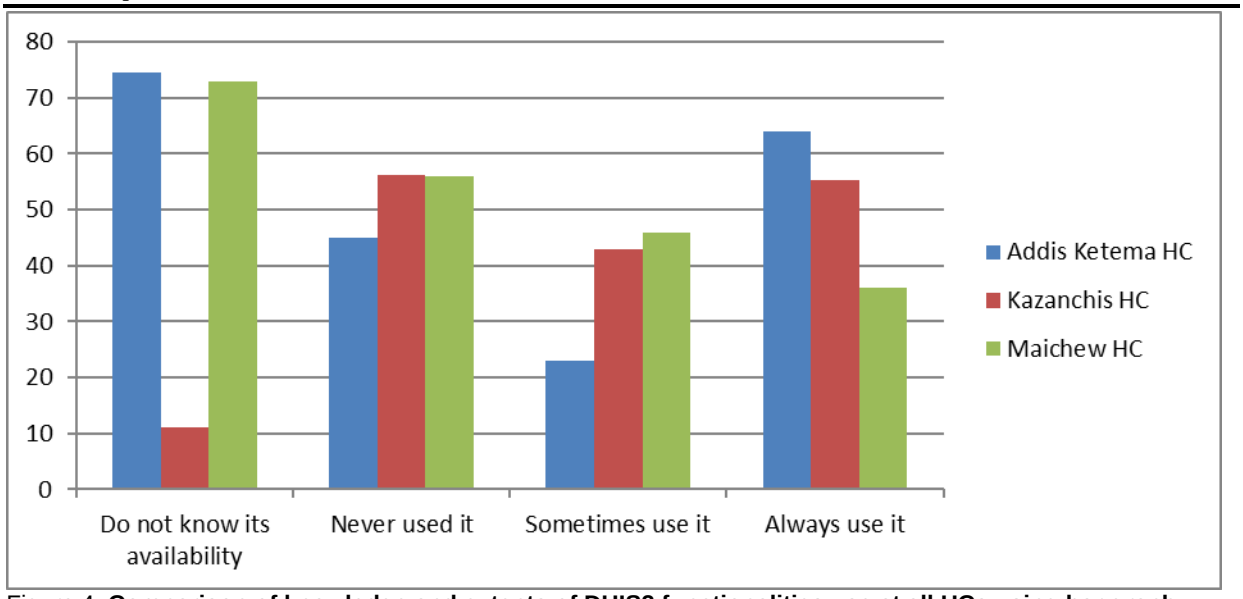


Figure 4: **Comparison of knowledge and extents of DHIS2 functionalities use at all HCs using bar graph**

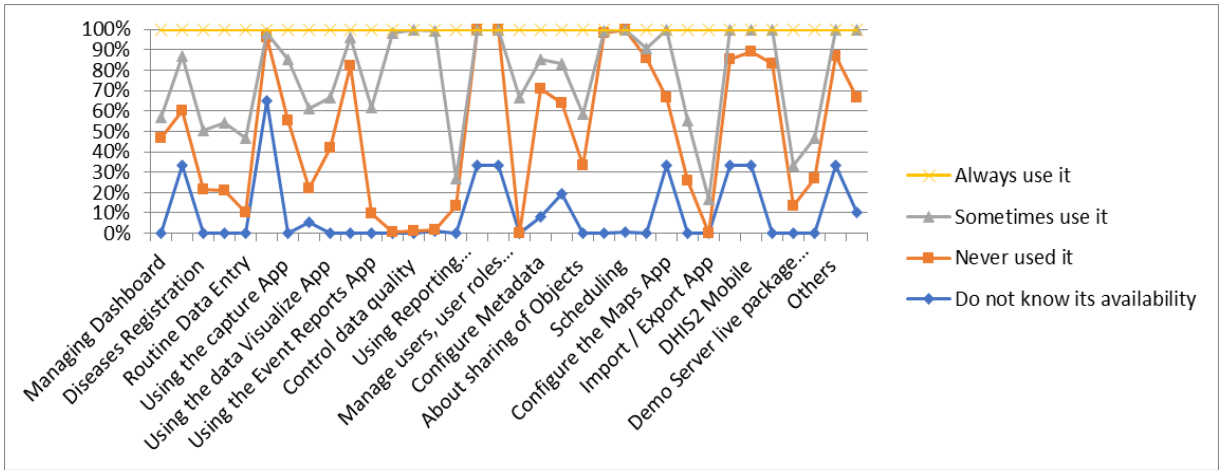


Figure 5: **Comparison of knowledge and extents of DHIS2 functionality use at all health centers using line graph.**

**Findings from the Interview sessions**

A total of 12 interview sessions (four at each health centers) were conducted to understand the level of knowledge and extent of use of DHIS2 functionalities. Attempt was also made to investigate the reasons for not using some of the functions available on the system. In addition to a face-to-face interview by the data collectors, a telephone interview was also conducted to get further clarifications on some missed data and ambiguous information. While transcribing the data for further analysis, we learned that some data collected were incomprehensible and ambiguous. Thus, as explained above, a data elucidation task was done by making telephone calls to the HIT professionals, asking for more clarification on the data filled. Hence, we were able to improve the data quality collected in a better way.

After a through transcription and clarification, we have summarized and organized results from interview data collection as follows,

- Most of the interviewees responded that, most important tasks they use DHIS2 for is registering patient data and controlling data. And they demanded a more focused training to better use the functionalities.
- Respondents except the HIT experts in each health center responded that they don't have any experience with the DHIS2 system and they don't use the DHIS2 system at all. This limits their responses for questions related to access to the DHIS2 system, primary functions of DHIS2 in their domain, major functions of DHIS2 they are familiar with, user's awareness on system functionalities and suggestions for future improvements. But main users of the system, HIT experts, have provided their response and feedbacks on the points raised and general information was collected from all health center's Medical Directors and health center coordinators by using HIT experts' assistance in explaining the interview questions. So proper trainings should be arranged soon to make them system users as per the plan.
- Beside this, respondent's response shows that they are familiar with major functionalities of DHIS2 system especially that relates to their day to day system operations. This includes features like Control Data Quality, manage users, user roles and groups, system settings, Data Entry App, Using and Reporting functionalities in the report App.

- With respect to challenges, respondents reported that data entering application is found to be problematic feature of DHIS 2. More specifically its usability and reliability could not be appreciated to the level required. Other issues including internet connectivity, system operation failure and data erasing issues were also other challenges specially when they use the system online. They use an offline DHIS program version to solve this.
- On the other hand, though system functions like event report, event visualize, event capture, WHO meta data browser, league table, and Maps were there on the system they were not known to most users. As a result they are not using them currently.
- Lack of proper training and reliable connectivity are found to be major challenges identified in the process. More over additional functionalities like reminder/ alarm to take backups is also pointed for future versions.

**Discussion**

As depicted above, from the mentioned major and sub functionalities of DHIS2, only few major functionaries were utilized currently. This calls for future actions to enhance system usability. In line with this, there are major functionalities that are not even known to the system users. Thus, it is easy to learn that an appropriate intervention should be designed to fill the gaps observed in the next implementation strategy.

In summary, the three selected health centers have different usage patterns in general but almost all health centers use common major functionalities like patient data registration, data entry app, and managing dashboard. Those usable and not usable major and sub functionalities were identified using the observation checklist in detail, including their specific sub tasks and activities for future actions. Hence it will be used as benchmark for the intervention strategies of our research project. In general, selected health centers show different ranges of system usage in relation to identified major functionalities but they all perform selected major functionalities related to their day-to-day operations. Generally, more effort is required to enhance the usability of the system under study. A supportive work in [12] indicated that data that are collected but not used are an untapped resource, and processes are needed to realize the potential value of the data collected by DHIS2 to inform action.

Following the findings one can understand that strengthening the use of more functionalities will also facilitate the general effort towards e-heath system in Ethiopia. This is in line with a literature in the area arguing that under-standing the opportunities offered by DHIS2 can also provide guidance in using other platforms [11].

**Conclusion**

Following the funding from Addis Ababa University for thematic research, the school of information science and school of public health are working collaboratively to investigate health data use, quality, and effective systems digitization. Accordingly, a sub-thematic research led by School of Information Science investigated the knowledge and extent of DHIS2 functionality use with the intent of improving use of the system for better digitization of the health data. Accordingly, the extent of use of DHIS2 functionalities was identified through empirical studies using interview and observation data collection methods. Findings showed that only few of major and sub functionalities of DHIS2 were utilized currently and need future actions to enhance system usability. In line with this, there are major functionalities that are not even known by the system users. Thus, it is easy to learn that an appropriate intervention should be designed to fill the gaps observed in the next implementation strategy. Based on the findings enhancing the systemic view of DHIS2 users through system modeling and training are found apposite. The more they have a holistic view of the system that they are using they will be better motivated to use more functionalities.

**Acknowledgment**

This work was supported by Addis Ababa University, Research and Technology transfer office and the Ministry of Health-Ethiopia through CBMP project.

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