Kenya eLearning Modules Pilot
Improving and Maintaining the Quality of EMR System Data and Using EMR Data for Decision Making

February 2016
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BACKGROUND

When lack of timely and complete patient data was identified as a major barrier to effective HIV/AIDS patient management by PEPFAR care and treatment partners in Kenya, I-TECH and in-country partners developed the KenyaEMR system to collect health data and improve patient care. During implementation, I-TECH purchased hardware, installed local networks, and set up and deployed the KenyaEMR software. I-TECH also provided facility staff with mentorship and on-the-job training by facility-based champion mentors.

Between October 2012 and September 2013, health manager, end user, and mentor trainings were delivered off-site over the course of two to five days (workshop length varied based on training, year, and audience). In response to an expressed need for shorter, in-person trainings, I-TECH transitioned to a new on-site model in October of 2013 and began training one to two champions at each site to support those responsible for using KenyaEMR to collect or report data. I-TECH currently supports on-site champion mentors and county-level training facilitators through refresher trainings, county-level review meetings, and by providing robust training materials.

ELEARNING technologies have been identified as advantageous tools for training individuals who may not otherwise be able to access educational resources because of time and distance (Escoffery, 2005). However, eLearning programs often experience high dropout rates (Escoffery, 2005; Yair, 2007; Annika, 2008; Herbert, 2006). Factors affecting retention have been identified as personal, eLearning environmental, and systems-based. Personal factors include the individual qualities and motivations of learners and instructors; environmental variables include such factors as access to online resources and support; and system-based components are related to infrastructure and systems quality, course quality, and institution quality (Bhuasiri, 2012).

To support facility-based mentors and standardize on-going, facility-based training, I-TECH decided to adopt a blended eLearning model, whereby eLearning modules are integrated into the existing mentorship-training model. As an initial step, I-TECH converted two classroom sessions into eLearning modules in 2014, Improving and Maintaining the Quality of EMR System Data and Using EMR Data for Decision Making. The modules are designed to teach users how to identify and address threats to data quality, the importance of evidence-based decision making, how to use data for decision making, related reporting processes, and how the KenyaEMR functions in data management and use.
METHODS

The aim of the assessment was to identify how the newly developed eLearning modules are currently being used, barriers to effective use, ways in which the modules can be improved prior to scale-up, and future directions for creation of additional eLearning modules by I-TECH.

DESIGN

The assessment utilized a mixed-methods approach that included both key informant interviews and a structured feedback questionnaire for each of the two modules.

POPULATION AND SAMPLE

In-depth interviews and questionnaires were conducted at three sites each in Trans Nzoia and Homabay counties. Sites were selected using a convenience sampling approach, based upon logistical considerations, as well as an interest in including sites with both strong and less-strong KenyaEMR uptake. Key informants included the in-charge and champion mentors from each site, as well as two to four staff members.

DATA COLLECTION

Data collection took place in June 2015. One of two evaluation team members implemented questionnaires and conducted interviews at each of the six sites. Audio recordings and detailed notes were taken during key informant interviews, and each informant completed a paper-based questionnaire.

DATA ANALYSIS

Interviews were loosely transcribed and reviewed by a third evaluation team member, who noted key topics and tracked quotes in Excel for analysis. Data from questionnaires were entered into Excel, and quantitative variables analysed using the same software.
RESULTS

PARTICIPANT CHARACTERISTICS

In total, 36 individuals participated in the assessment. Eleven participants identified as either facility in-charge or champion mentors (five of each, plus one who reported having dual roles as both). Twenty-three staff members participated, representing a range of positions within the facilities, including clinicians, lab technicians, counsellors, data clerks and health records information officers, and receptionists. Two participants did not identify their roles (Table 1).

<table>
<thead>
<tr>
<th>Role(s) of Participants</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility In-Charge &amp; Champion Mentors</td>
<td>11</td>
</tr>
<tr>
<td>In-Charge</td>
<td>5</td>
</tr>
<tr>
<td>Champion Mentor</td>
<td>5</td>
</tr>
<tr>
<td>Dual Roles</td>
<td>1</td>
</tr>
<tr>
<td>Facility Staff</td>
<td>23</td>
</tr>
<tr>
<td>Service Providers/Clinicians</td>
<td>6</td>
</tr>
<tr>
<td>HTC and Adherence Counsellors</td>
<td>9</td>
</tr>
<tr>
<td>Lab Technicians</td>
<td>3</td>
</tr>
<tr>
<td>Data Clerks and Health Records Information Officers</td>
<td>3</td>
</tr>
<tr>
<td>Health Educators</td>
<td>1</td>
</tr>
<tr>
<td>Receptionists</td>
<td>1</td>
</tr>
<tr>
<td>Unknown Role</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
</tr>
</tbody>
</table>

Thirty-three percent ranked their computer literacy as strong, 61% as moderate, and just under 3% as weak. Nearly 70% of participants reported using the KenyaEMR on a daily basis, while another 25% reported using it on a weekly basis. Just fewer than 3% reported using it rarely and less than 1% (one participant) reported having never used the system at all (Figure 1).
Between 53% and 61% of participants reported completing both modules in full alone, with 14% to 17% reporting partial completion alone. Others reported partial (8%–11%) or full completion (6%) with others (Figure 2).
MODULE IMPLEMENTATION

KenyaEMR and Champion Mentors

According to participants, the KenyaEMR system was rolled out to facilities between 2012 and 2014. Respondents reported positive experiences with the KenyaEMR system. Benefits differed across facilities, and included the ability to work more efficiently, follow up with patients in a timely manner, and to more easily produce and share data. Explained one informant:

*The experience [with KenyaEMR] has been good... It's easy for me to get information from the EMR and produce data that someone can understand.*

Some facilities reported challenges, primarily with initial installation and rollout, including challenges with initial data import and cleaning, and resistance from staff in certain cases as a result of limited computer literacy.

Champion mentors described their role as one that is evolving. At the beginning, it is about showing staff how to use the KenyaEMR system overall. Over time, it expands to include troubleshooting IT issues and working with staff to address more specific questions arising over the course of continued use. Explained one informant:

*At first it was a lot about walking people through the system and training them. Now it is more about troubleshooting on IT issues or helping solve specific things.*

Champion mentors described a variety of training experiences. Two of the six champion mentors identified formal champion training as the primary way in which they learned how to be a champion mentor. The remaining four were either mentored by colleagues, or reported attending champion mentor review meetings, which reinforced understanding of the system and their roles. Informants noted that somewhat frequent staff turnover means that not all have similar training experiences—some must rely on the job training or information shared by their predecessors, in the case of champion mentors.

Facility management described their role as one of support, particularly with facility-level barriers or challenges that arise during use. For example, a facility found and installed a generator to address frequent power outages that were affecting use. Another highly involved informant explained:

*As In-Charge, I support [our champion mentor] in whatever he is doing and mentor others when he is not available. Like the issue of power, we are trying to get the power back on. We are working on a solar system and then we will have power. And there's the issue of security for the computers. So that's what we are doing. And I ensure that we have our regular meetings to discuss EMR.*
Pilot Rollout and Typical Use

Three of the six facilities included described introducing the eLearning modules during larger staff meetings before having champions follow up with staff to provide additional instruction. As one champion mentor explained:

_They installed the modules, and then, with support of the in-charge, I called a meeting and informed staff on the issue of eLearning for whoever is willing to do it._

The remaining facilities described introducing the modules to staff on a one-on-one basis. Another champion mentor stated:

_I would look for staff who interact with EMR on daily basis, like staff at CCC and MCH, and I would approach them to guide them to look at what we have._

The majority of informants identified using eLearning modules between clients, intermittently during the day when workflow slowed, or after hours, particularly evenings and weekends.

_ [I use it] in between my work schedule. When I’m working on client files, after I’m done I take time to go through modules whenever I can, most of the time in the afternoons when the clinic is done._

Some found the lack of structured time proved challenging. One informant expressed the opinion that making the modules ‘time bound’ could improve focus and attention.

Although the eLearning modules were designed to be used individually, many informants reported using a hybrid approach that involved both individual and group work. In one example, staff described working through the modules independently, but coming together as a group to workshop some of the more difficult questions: _They accessed [the modules] individually, but they consulted together on hard questions._

Informants also identified this as the preferred approach for use moving forward, saying:

_Any time individually you understand better. As a group, some will understand and some will not. So you have to do it as an individual first, get the information, then go as a group whereby you can be made to understand areas you did not understand [by yourself]._

The mixed approach differed across the sites. Some suggested that individuals meet as a group at least once per section throughout the duration of the modules:

_HOLD staff meetings with group discussion of the content...as sub-discussions of the module._

Others suggested coming together as a group after completion of the modules to discuss questions and lessons learned. This was cited by one informant as an opportunity for I-TECH staff to connect with users in person, something she felt was important.
One informant noted that the ability to schedule group sessions may depend on the type of staff expected to attend saying that a group setting may be more realistic for counsellors, while clinicians may need to work individually because of scheduling challenges.

The majority of users reported accessing eLearning modules from the server room, often from only a single computer. In two instances, clinics reported installing the software on their local network to enable access at multiple workstations, but problems with connectivity and lack of audio meant only one workstation was usable during the pilot period.

**Motivations for Use and Stakeholder Buy-In**

Motivations for use of the eLearning modules were frequently identified as a general interest in learning, and the ability to self-assess knowledge gains and look for areas of improvement. In discussing the ability to self-assess and look for areas of improvement, one informant explained:

> You are told your marks, so if you don't pass you're given another chance. I found that part motivating. Like I told you, I want to revisit certain parts because I was not satisfied with my marks.

To improve motivation for starting and completing the eLearning modules, informants suggested several approaches. The first was to provide a certificate of completion. Nearly all participants cited the desire to obtain a certificate upon completion as a factor affecting motivation. Others suggested using additional promotional materials, such as t-shirts, to motivate health workers to complete the modules. The importance of early adopters, or individuals who are motivated to use the eLearning modules and can encourage others to do the same, was also discussed. Finally, an in-charge expressed the belief that management should lead by example, suggesting that we should take it upon us as management of the hospital to lead in going through the module and encouraging our staff. One champion mentor advocated for embedding the training in existing continuing education (CME) activities to encourage buy-in.

**Barriers to Use**

Informants identified several barriers affecting access and use related to facility infrastructure, technology limitations, and management or organizational factors.

**Facility Infrastructure**

The most frequently cited infrastructural barrier affecting use of the eLearning modules was frequent power outages. Power outages were identified at all included sites. When asked what challenges participants faced, one participant answered: ‘Problems with power and electricity. You start and power goes out and you get discouraged.’ In one instance, facility management obtained a generator specifically for use with the eLearning modules. The majority of facilities did not indicate how power issues were addressed, or what coping mechanisms were utilized if outages were ongoing.
**Technology Limitations**
In most of the clinics included in the pilot, eLearning modules could only be accessed on a limited number of computers housed in a single location. This meant **staff had to leave their work stations** to use the eLearning modules, and often found **computers already in use** by other staff upon arrival. One staff member explained, ‘At times, you might get your own time to come and you find someone is already there using the machine.’

One clinic suggested making the **modules available on individual workstations**, or at least more stations, to facilitate access:

*If it’s possible for them to be extending maybe the monitors so that anybody can be able to use it at his point of work, not having to depend on one particular one, it would help.*

However, it was pointed out by one of the in-charge that the current system may not be compatible with **Userful**, the platform installed on the majority of clinic computers for desktop virtualization.

In addition to challenges with number and location of computers, informants reported **problems with sound**. Either the majority of computers in the clinic did not have functioning speakers, making a single computer or single location for modules the only realistic option for the clinic, or computers that were expected to have access to speakers experienced problems during the pilot period.

Finally, one informant cited **glitches in the software** that made access challenging. It was reported that **the system crashed frequently**, although the informant acknowledged that he wasn’t sure if this was a software glitch or a power outage, as the primary symptom was a black screen.

In another instance, individual workstation logins did not function correctly, so staff had to use the facility’s administrative password to gain access. Several informants felt **integrating eLearning modules into the KenyaEMR** system could be one way to reduce challenges related to user accounts, and to streamline access. Of the two facilities queried, both supported this approach. They expressed the opinion that some already think of the two platforms as one and the same, and that creating fewer unique user accounts across multiple platforms could simplify the initial setup and on-going use.

**Organizational Barriers**
As mentioned previously, the majority of informants reported using eLearning materials when patient flows slowed—often in the afternoons, or before or after clinic hours, including weekends. Some found the **lack of structured time** proved challenging. One informant expressed the opinion that making the modules ‘time bound’ could improve focus and attention. However, informants acknowledged the need for flexibility to accommodate other responsibilities, and to allow people to start, stop, and return to topics as necessary.
MODULE CONTENT AND FUNCTIONALITY

When surveyed, the majority of participants rated amount of information and time required to complete as just right (75%–89%) for both modules. Fewer felt the amount of information and time required to complete was too little (11%–25%). None rated either module as too much (Figures 3 and 4). This is supported by qualitative findings, which suggest some informants wanted additional materials and supporting scenarios. The majority of participants agreed with the statement that they were motivated to action and would recommend the modules to others.

Figure 3. Length and Amount of Information (EMR Data Quality)

![Bar chart showing the distribution of responses for amount of information and time required to complete for EMR Data Quality module.]

Figure 4. Length and Amount of Information (EMR Data for Decision Making Module)

![Bar chart showing the distribution of responses for amount of information and time required to complete for EMR Data for Decision Making module.]

Content

Nearly all participants surveyed agreed with the statement that the modules were useful (100%) and relevant (96%–97%). Only two participants responded differently. Only one respondent
disagreed with the statement that the data quality module provided relevant information, and one neither agreed nor disagreed with the statement that data for the decision-making module provided relevant information (Figures 5 and 6).

![Figure 5. Usefulness and Relevance (EMR Data Quality Module)](image)

Again, the vast majority identified increased confidence in their ability to describe evidence-based decision making (92%–96%), data transformation (96%), EMR decision support (96%–100%), and to identify EMR reports (89%–96%). A minority of participants reported feeling confidence was reduced or unchanged (0%–7%) (Figures 7 and 8).

![Figure 6. Usefulness and Relevance (EMR Data for Decision Making Module)](image)
When asked to summarize key messages, participants highlighted:

- The importance of checking patients in and out completely.
- The importance of the same information being reflected on hard and electronic copies.
- The importance of checking and correcting suspected data-quality errors quickly.
- The importance of data completeness.
- The importance of EMR to data quality, decision making, and reporting.
- The relationship between data quality and data use.
- Awareness of the importance of data use at the various levels—facility, county, and national.

The majority strongly agreed with the statement that they could apply lessons learned (Figures 5 and 6). When asked during in-depth interviews, participants provided several examples:

- Checking blue cards for errors/mistakes.
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- Ensuring a correct unique identifier is assigned to each patient.
- Ensuring patients are checked in and out accurately.
- Using the system as a reminder for patient care and follow-up.

Ninety-two percent (EMR data-quality module) and 96% (data-use module) agreed with the statement that they could relate to the scenarios provided in the modules. During in-depth interviews, scenarios were the most frequently cited feature of the modules that participants liked. They were characterized as ‘practical’, and enabling users to see what was happening ‘on the ground’.

When discussing areas for improvement, some participants expressed interest in additional scenarios and more information or greater detail. Not all were able to provide specifics, but suggestions included the basics of using EMR (using blue cards, walking through the system, such as checking in and entering data), information about managing patient ID numbers (unique identifiers), gaps in monthly data, comparing EMR reports with hard copies, analysing data with missing data points and pharmacy-related data quality. In cases where clinics found existing content challenging, one suggested creating a three-tiered approach, with each tier representing a different level of difficulty.

In addition to existing content, participants suggested topics to be considered for additional modules. These included:

- The basics of KenyaEMR (to support new users).
- Module for managers to encourage buy-in of the EMR and electronic learning systems.
- Resource management to support management activities (such as human resource allocation).
- How to share data between facilities.
- Basics of data analysis and interpretation (to serve as precursor for data-quality training).
- Paediatric ANC dosing of ARVs (to reflect recent changes).
- Couples and adherence counselling (both refresher training and information about how to enter relevant information into the KenyaEMR).
- Pharmacy and lab.
- HTC.
- MCH and PMTCT (as existing EMR learning aids are not sufficient).
- Clinical aspects of HIV treatment and care (primarily refresher training).
- Opportunistic infections.
- Biosafety (e.g., how to separate waste and properly dispose of it).

Two clinics felt the **existing content was challenging** for staff. In one case, informants felt content was challenging for those support staff (administrative) with lower levels of education and less computer literacy. In the other, informants felt data-quality concepts were difficult. Finally, one informant felt some of the **language was too technical**, but could not remember exactly what language was used in those instances.

**Usability**

When surveyed about usability, participants ranked **clarity, organization, and navigation** highly for both modules. In the case of *Improving and Maintaining the Quality of EMR System Data*, 100% of participants ranked organization and navigation as good. Ninety-six percent ranked clarity as good, with 4% (1 participant) ranking it as fair (Figure 9). *Using EMR Data for Decision Making* fared almost as well, with 96% ranking it good for organization and navigation, and 93% good for clarity.

**Figure 9. Usability (EMR Data Quality Module)**

![Figure 9. Usability (EMR Data Quality Module)](image-url)
In in-depth interviews participants liked the **ability to test themselves**, saying it boosted confidence, as well as the modules’ flexible design—i.e., being able to **stop the modules and restart**, and being able to **go back and repeat sections** if needed. One commented, ‘If you’re not getting that point, you can go back, and after going back you can get that point so clearly.’

The majority also cited the **use of audio and visual components**, saying they found it more engaging. One participant explained:

> I liked the way it was structured. It was just structured in a manner that you read and listen... You aren’t absent-minded. You click and it speaks and you listen and you are engaged fully.

Despite ranking usability highly when surveyed, in-depth interviews highlighted several areas for potential improvement. Participants reported challenges using certain elements of the platform’s interface. The first challenge involved answering **questions requiring users to drag and drop** (or order) a series of options. Users didn’t understand how the drag and drop feature worked and were unable to answer those questions correctly as a result.

The second issue reported was use of **open-ended questions**. Several participants reported disliking open-ended questions generally and suggested they be **changed to multiple choice** saying:

> I think for learning situations you are able to get the idea more quickly with multiple choice because you type the text and you’re told it’s wrong, you type it again and it’s wrong, and then you just continue [without getting the answer].

In the decision-making module, participants reported that, after two attempts to answer open-ended questions, the module would move onto the next section without providing a correct answer.
Informants also discussed the points in the modules at which questions were presented. One informant reported not liking questions that are posed at the beginning or middle of content sections, instead preferring that **all questions be posed at the end of a section**. However, this was something not all users agreed on. One participant suggested **placing assessment questions after each sub-section**:

> I wish they had questions under each subtopic, rather than finishing the whole topic, then questions after, to enable whether we really understand that subject.

The majority of facilities also reported a common glitch in which **the system would not recognize a correct answer**. Instead, the system would inform users the given answer was incorrect. When the system would ultimately share the correct answer, users would discover that it was the same answer originally provided. It was reported that this happened throughout the modules, not only during the last assessment. One participant also reported being **unable to save** her place in the module for later retrieval.

Finally, a number of participants requested supporting materials. This includes **copies of the module content and answers to assessment questions**, as well as additional reference materials that include **information about how to install the program, set it up, and use the modules**. Participants felt this would enable busy mentors to refer people to other resources, and give users flexibility to continue training in other places, or at other times. Lastly, it also recommended that I-TECH consider indicating which 'how-to' materials are available directly through the EMR itself.
DISCUSSION

The pilot study highlighted overall satisfaction with KenyaEMR and the new eLearning modules. Participants found the modules useful and relevant, reporting increased confidence in both data-quality and data-use tasks.

Despite facing certain challenges, such as limited time and interruptions in power supply, the majority of informants completed the modules either fully or partially. Only 6% did not complete the Using EMR Data for Decision Making module; 17% did not complete the Improving and Maintaining the Quality of EMR System Data module.

Almost universally, participants highlighted the interactivity of the modules—specifically, the use of scenarios and self-evaluation—as their favourite feature of the eLearning materials. Participants also appreciated the flexible design of the modules, which allows users to pause and return to certain sections as needed.

Although respondents reflected on the modules positively, a number of recommendations can be made to support the success of future rollout and use:

1. **Encourage and support facility level buy-in for module use:** Facilities identified their role as one that supports use of the KenyaEMR and associated learning materials. Often, this meant finding solutions to facility-level barriers affecting access and use, such as power supply and security. Facility management was also cited as having the ability to allocate specific time for eLearning activities, which some informants felt could improve outcomes.

2. **Encourage hybrid (individual and group) approaches to learning:** Although not reflected in the survey data documenting current practice, participants discussed working through modules individually, but coming together to workshop challenging questions, and share lessons learned throughout the process. For most, this was the recommended approach for module use moving forward. Participants felt this method allowed users to move through the modules at their own pace, while providing a forum to learn from others.

3. **Ensure access on more than one computer:** Although at least two facilities included in the pilot intended to allow access to the modules at different workstations via their networks, limited access was reported as a challenge by the majority of clinics. Some sites reported that few computers had functioning speakers, while others experienced interruptions in the network, restricting computer access to a single room. For participants, this meant leaving their workstations to access the modules—often only to find someone else already using the designated computer.

4. **Incorporate additional scenarios, using relevant clinical examples:** When asked what additional information they would like to see included in existing modules, or developed as part of new modules, participants identified a wide range of topics. Many related more to refreshing
the clinical skills of informants than directly to the health information system. Integrating relevant clinical examples into the modules may increase interest, while at the same time reinforcing important clinical topics.

5. **Remove questions at the beginning of sections:** Several participants discussed the points at which self-evaluation questions are presented in the modules. One participant liked that questions were integrated throughout the sections (rather than only being presented at the end). However, the other disliked the questions presented at the beginning of sections. This may reflect different attitudes about learning.

6. **Change open-ended questions to multiple choice:** Several participants reported disliking open-ended questions. This was in part because of a bug in the software associated with those questions, but also because of a belief that multiple-choice questions are easier to learn from.

7. **Provide hard copies of supporting materials:** A common point of discussion for participants was the desire to have hard copies of supporting materials—both a 'how-to' that contains information about how to install and setup the modules, as well as a copy of the module content itself. Participants felt that mentors could point users toward specific content as relevant, helping to alleviate any burden placed on mentors by the additional responsibility, and that hard copies could enable users to study off-site, or without power, to improve access to materials. Participants also expressed the desire to have access to the answers to assessment questions so they could better understand which questions they are getting right, and which they answered incorrectly.

8. **Provide certificates of completion:** All participants identified certificates of completion as an important motivational factor; the majority expected to receive certificates upon completion of the modules. Where possible, it is recommended that I-TECH provide certificates of completion.
CONCLUSION

This pilot provides timely information to support revision of existing eLearning modules and development of new content as part of on-going KenyaEMR capacity building activities. The pilot demonstrates satisfaction with existing training modules, as well as a desire for future development of additional materials incorporating clinically relevant topics. As rollout continues, there will be a need to consider incorporating additional scenarios into eLearning modules, improving access at facility workstations, developing hard copies of training reference materials, and providing certificates of completion to encourage motivation.
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APPENDIX

DATA COLLECTION TOOLS

*Individual interview guide: KenyaEMR Champion Mentors or Site Leaders*

Hello, my name is ____. Thank you for agreeing to speak with me today. This interview is part of an evaluation which has been approved by the Kenya Ministry of Health. We expect the interview to take approximately 30-45 minutes.

As we mentioned earlier, we are interested in your thoughts and opinions on training of health care workers on the KenyaEMR system. We are interested in your feedback on the ‘eLearning’ modules shared with you recently. The ‘eLearning’ modules are electronic learning resources, which can be used for self-study or guided group study. These modules are intended to reinforce learning among staff who have already been trained on KenyaEMR, as well as staff who may have missed the training workshop (such as staff transfers). Your feedback will help us improve training resources on KenyaEMR.

Please do not be shy about telling us your thoughts and opinions. All points of view are valid and we want to hear about all different types of ideas and thoughts, because the purpose is not to judge the outcomes but to understand how we can make the training more useful and relevant.

We will be audio recording this discussion [show participant the recorder]. The reason we are recording this is to make sure we do not miss anything that is said. Your name will not be recorded. The main reason we are recording is because it will be difficult to write down everything that is spoken during our discussion today. Once the interview is over the tape will be transcribed verbatim and this text will be used for analysis. Do you have any objections to the tape recording? [If participant objects, recording will not be done].

[If there is a note taker then the note taker must be introduced.] X will also be taking notes—as we know technology can fail, and we want to be sure to capture your main messages to us. This will ensure that we consider your opinions as we try to improve the training materials and training strategies on KenyaEMR.

[NOTE TO FACILITATOR: Questions do not have to be asked sequentially, but all topics should be covered.]

*First I would like to hear about your experience using KenyaEMR.*

1. Please tell me about the experience here at your health facility. When did you start with KenyaEMR? How has the experience been?

*Now we would like to get a bit of background on your role as a KenyaEMR Champion Mentor at your site.*
2. When did you become a KenyaEMR Champion Mentor?

3. What trainings and other activities have you participated in to reinforce your role as a Champion Mentor?

4. Can you please describe what it has meant for you on a day-to-day basis to be named as a KenyaEMR Champion Mentor? How has this impacted your work and mix of professional responsibilities?

Now let's talk now about how you and others used the two KenyaEMR eLearning modules at your site.

4. How, when and where did you yourself use each module? How did you share the modules with others?
   a. Who did you share it with?
   b. How, when and where was each module accessed and viewed?
   c. If you were not able to share the modules with others, what were the obstacles or issues you faced?
   d. How many staff members completed the modules? How many staff members did not complete the modules?
   e. What was the role of facility leadership in sharing the modules and promoting their use?

5. Did you experience any technical difficulties in playing the modules? If so, can you describe the difficulties? What did you do to overcome these difficulties?

6. We would like to learn about whether it is best for health workers to use the modules individually (on their own) or in groups. What was your actual experience with individual vs. group use?

Now let's talk first about the content and messages of the two modules.

7. Were you able to use each module? Partially? Fully?

8. What messages did you take away from this module? Were there any things that you learned that you could apply in your work? If so, what were examples?

9. What messages were missing from this module? What things would you have liked to learn more about, but which were not covered in the modules?

10. What did you like about the modules? What part or parts of the module were most interesting, engaging, or stimulating?
   a. For you?
   b. For others?
11. What did you dislike about the modules? What part or parts of the module were least helpful? Please describe in what way they were not helpful, e.g. boring, confusing, repetitive, not relevant to daily work and responsibilities, etc.?
   c. For you?
   d. For others?

12. What do you wish had been different about this eLearning modules?

Now I would like to ask about each eLearning module separately.

11. Can you share any specific feedback on the module on “Using EMR Data for Decision Making”, beyond what you have already shared?

12. Can you share any specific feedback on the module on “Improving and Maintaining the Quality of EMR System Data”?

Now we would like to ask your advice as we think about scaling up the eLearning modules to many more sites.

13. Can you please share your opinions on the best way to use the materials?

14. What recommendations would you share with other Champion Mentors on best ways to use the eLearning modules?
   a. If you were to recommend a particular way of using eLearning modules, what would this be?
   b. Any specific recommendations for best ways to use the module titled Using EMR Data for Decision Making?
   c. Any specific recommendations for best ways to use the module titled Improving and Maintaining the Quality of EMR System Data?

15. How should Champion Mentors be oriented on using the eLearning modules?
   f. Was there anything that was particularly helpful that you learned with the I-TECH staff member provided the modules?
   g. Was there anything you wished you had known?

Finally, we would like to ask you about your recommendations on future use of eLearning modules to reinforce best practices in EMR use.

16. What other topics would be appropriate for eLearning modules related to EMR use? Can you please explain your response?

17. Are you aware of other examples of eLearning being used in other health training in Kenya? If so, what is your impression of the strengths and weaknesses of these programs?

18. What motivates health workers to complete eLearning? What demotivates them? What could be done to increase motivation?
19. Do you have any other feedback on the eLearning modules that we have not already discussed? Please explain.

Do you have any questions for me?

Thank you for sharing your opinions!
Kenya eLearning Modules Pilot

KenyaEMR eLearning Pilot Evaluation
Participant Demographic Questionnaire

Date: ________________________________________________

Health facility name: ___________________________________________

Role within site: _______________________________________________

1. Computer literacy:
   - Weak
   - Moderate
   - Strong

2. Frequency of use of KenyaEMR
   - Daily
   - Weekly
   - Monthly
   - Rarely
   - Never

3. Did you participate in any in-person training workshop on KenyaEMR?
   - Yes. If yes, please indicate date and location of training, below.
   - No

   Date of training: ______(month) _______ (year)
   Location of training: _________________________________

4. How would you describe your use of each eLearning module?

<table>
<thead>
<tr>
<th>Module: Using EMR Data for Decision Making</th>
<th>Module: Improving and Maintaining the Quality of EMR System Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>• I did not use this module</td>
<td>• I did not use this module</td>
</tr>
<tr>
<td>• I partially completed the module on my own</td>
<td>• I partially completed the module on my own</td>
</tr>
<tr>
<td>• I fully completed the module on my own</td>
<td>• I fully completed the module on my own</td>
</tr>
<tr>
<td>• I partially completed the module with others</td>
<td>• I partially completed the module with others</td>
</tr>
<tr>
<td>I fully completed the module with others</td>
<td>I fully completed the module with others</td>
</tr>
</tbody>
</table>

Thank you for your responses!
# Using EMR Data for Decision Making

For each statement: please indicate which of the following response best reflects your experience with the *Using EMR Data for Decision Making* eSession. Your feedback is valuable to the continual improvement of this program.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The program presented me with new and useful information.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. The program was relevant to me.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. I could relate to the scenarios presented.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. The program motivated me to take action.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. I will be able to apply what I learned to my job.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. I would recommend this program to others.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

For the following statements, please indicate how your confidence level has changed after taking this eSession.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Much Less Confident</th>
<th>Less Confident</th>
<th>Confidence Unchanged</th>
<th>More Confident</th>
<th>Much More Confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. I can describe how evidence-based decision making improves service delivery.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8. I can describe the process of transforming data into information used for decision making.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. I can explain how an EMR system supports evidence-based decision making.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10. I can identify KenyaEMR reports that can inform specific service delivery, resource management, and programmatic decision making.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Statement</td>
<td>Very Poor</td>
<td>Poor</td>
<td>Fair</td>
<td>Good</td>
<td>Very Good</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
<td>-----------</td>
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<td>------</td>
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</tr>
<tr>
<td>11. Clarity of content:</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>12. Organization of information:</td>
<td></td>
<td></td>
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<td>13. The navigation of the module was:</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Statement</th>
<th>Too little</th>
<th>Just Right</th>
<th>Too Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. The amount of information presented was:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Time required to complete program:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. What suggestions do you have for improving the intervention?

17. Additional comments:
## Improving and Maintaining the Quality of EMR System Data

For each statement: please indicate which of the following response best reflects your experience with the Improving and Maintaining the Quality of EMR System Data eSession. Your feedback is valuable to the continual improvement of this program.

<table>
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<tr>
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<td>2. The program was relevant to me.</td>
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<td>☐</td>
<td>☐</td>
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<td>7. I can identify key threats to the quality of EMR system data and how they affect the quality of health services.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<td>8. I can identify appropriate solutions when data quality is threatened.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>9. I can explain how EMR system features promote data quality.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10. Check paper and electronic forms for data quality.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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