SELECTION/IMPLEMENTATION GUIDELINES

Product Decision Making

PREPARATION:

1) Determine what functions will be needed by each user of the EHR both now and in the future for:

   a) Appointments
   b) Billing
   c) Clinical Charting
   d) Order Entry
   e) Patient Access
   f) General Documentation
   g) Reporting

   For each function that each user will be using, determine if they will need read and/or update capability. See "EHR Requirements" section for further details.

2) What data elements will need to be captured, stored, and updated.

3) What data that you currently have will need to be moved into the EHR (ex. all charts or only active patients; all information within a patient's chart or a subset, etc.)

4) What are your expected volumes of data and number of users, both maximum and average?

5) Are you planning on participating in the federal government's Meaningful Use program?

6) Will remote access (ex. home computer, mobile) be needed or only local, on-site?

7) Where does the software and data need to be located (local computer, cloud, or both)?

8) Hardware platforms you will need :

   a) MAC vs. PC
   b) Mobile (smart phone, IPAD or equivalent) → Apple, Android, Microsoft
   c) Servers (local and/or remote)

9) When does the system need to be available each day?

10) Interfaces that will be needed to other systems/databases both within your facility and with outside institutions.

11) Specific timeframes that need to be met for implementation.

12) How much money you want to spend for:

   a) Initial purchase, customization, and installation of the EHR.
   b) Ongoing fees.

COST CONSIDERATIONS:

INITIAL:
1) Payment arrangements
2) Discounts
3) Warranties
4) Components
   a) Software
   b) Hardware
   c) Data conversion programs
   d) Customization (EHR, interfaces)
   e) Documentation
   f) Training
   g) Implementation Support

ONGOING:
1) Software
2) Hardware
3) Ongoing training for new employees
4) Technical support
5) Additional customization

SELECTION:

1) Ability to satisfy function and data requirements either inherently or through customization.

2) For clinics and institutions, ability to support interfaces to other internal systems and databases either through vendor or inhouse customization.

3) Ability to support interfaces to external databases (ex. HIEs) as provided and/or required by government regulations.

4) Degree of support for Meaningful Use (provide specific functions and statistics), if needed.

5) Certifications by government authorized certifying organizations.

6) Support of government HIPAA and other privacy regulations.

7) Enforcement of data encryption standards for security.

8) Legal ownership of data by customers.

9) Adequate backup of software and data to ensure system availability and response time requirements.

10) Financially justifiable through cost/benefit analysis.

11) Verification that adequate testing has been done by the vendor.

12) No. of customers, both general and psychiatrist specific; Degree of access to vendor's customers.

13) Access to demo system.

14) Ability to implement within timeframe requirements.

15) Adequate support for customization, training, implementation, and support needs (see below).

Implementation

SOFTWARE ADDITIONS/CHANGES:

An early step in the implementation process is to finalize any requirements for additions/changes to the EHR, itself, as well as other programs that may be needed, so that work can begin on them. This would typically include:

1) Function modifications
2) Required interfaces
3) Data conversion programs

As indicated above, these needs should have been discussed with the vendor during the selection process to determine whether this was feasible to do and at what cost. For larger practices and institutions with IT staff, some of this work can possibly be done in-house.

HARDWARE NEEDS:

Any additional hardware that will be needed should be ordered early in the implementation process to ensure that they will arrive in time to install them prior to their use in testing, training, and conversion to the new EHR. This would typically include:

1) Laptop/desktop computers
2) Servers
3) Power/data transmission lines
4) Mobile devices

PLANNING:

1) **Downtime procedures** need to be developed to be used in the event of a system failure. This is typically a set of manual procedures that utilize paper forms to capture data (orders, demographics), etc. that can then be entered into the EHR once the system becomes available, again. In addition, communications protocols using phone, fax, etc. need to be established to ensure that daily work is not compromised.

2) **Disaster recovery** consists of a set of protocols to address the sudden loss of the use of the EHR and includes:

a) Switching to downtime procedures.

b) Assembling a support team to investigate the source of the problem and fix it. For larger practices and institutions, this would likely include in-house staff working in conjunction with the vendor. For smaller practices, the vendor would be the primary focal point for assistance.

c) Entering any data that has been captured by the downtime procedures into the EHR once it becomes available, again. In doing so, it is important to address any synchronization issues. For example, during downtime a lab order may have been recorded manually on paper. When the EHR becomes available, again, the order would have to first be entered into the system before the lab results could be recorded.

3) The development of **testing, training, conversion, and implementation timelines** can be extremely helpful in keeping the entire implementation process manageable and under control.

4) **Adequate staffing /coverage for testing and implementation** need to be identified.

5) If you are planning on participating in the **Meaningful Use** program, you will need to assess your practice to determine what additional data you will need to capture and which functions you will need to incorporate into your daily work to satisfy the requirements of the program.

TESTING:

There are several levels of testing that need to be done to ensure a successful implementation. First, the vendor/developer of the EHR needs to do their own testing:

1) **Unit** → each program within the EHR is tested to eliminate all errors.

2) **Integrated** → all programs are tested to ensure they work together without errors.

You should ask the vendor/developer to provide assurances that this testing has been done.

The next level of testing verifies that each **Function** successfully works with not only the vendor/developer's own test data, but the customer's data, as well. This can be done even prior to actually purchasing an EHR by having access to the vendor/developer's demo/training system and testing out various real-life scenarios. It can be a good way to determine if the EHR will fit the customer's needs or whether any customization, if possible, is going to be needed.

The next and often final level of testing is **Systems** whereby it is confirmed that the EHR can handle expected volumes of data and user utilization, both average and maximum, within response time parameters. This is particularly important for customers who have large volumes of data and many users. The vendor/developer should be able to give you assurances that such testing has been done on their own even prior to your purchasing their EHR. However, once the product is purchased and after any customization is completed, the customer will need to repeat this level of testing with their own data.

Sometimes, particularly when a facility has an existing software product and is converting to another, it may elect to run both systems in **parallel** for a short time to ensure that the new system provides the same output as the previous one for functions where this is expected to happen. This can be somewhat time consuming, because it requires the same data to be inputted into 2 different systems and the results then compared. For example, if a facility had an EHR which produced patient statements a certain way and the facility needed the replacement EHR to create a statement with the same information on it, it may want to use parallel testing for this purpose.

TRAINING:

There are various ways that training can occur, including **in-house** classes and **on-line**, either self-directed or with a vendor representative directing the training by phone or through the computer. The training needs to **address the day-to-day work** of each user, not just how each function works. For example, if the EHR is providing an inpatient order entry function, it is not sufficient to only provide training in how to enter an order. A surgeon who needs to d/c orders when a patient goes to the ER, enter new orders when the patient moves to the recovery room, and then restart some of the original orders that were in effect prior to the surgery would need to be shown how to accomplish that sequence of events.

There should also be **on-going accessibility to a demo system** which contains the full functionality of the EHR so that users can practice, even when they're not in a specific training session. Training needs to be available for not only current employees, but **ongoing for any new employees** after the EHR is implemented.

CONVERSION:

The conversion process involves:

1) **Migration of any data** into the new EHR. For large practices/institutions, it is sometimes necessary for the vendor/developer to write computer programs which automatically convert and move customer data directly into it. For smaller practices, it will be up to the customer to manually enter any data that will be needed using the

functions provided by the EHR, but you should consult with the vendor/developer to determine the optimal way to do this.

2)   **Developing a specific plan** to switch from your current way of managing your practice to using the new EHR. This plan needs to minimize the impact on your daily work as you make the switch.   One aspect of the plan is to determine whether you want to implement all of the EHR's functions immediately or phase them in. Sometimes timing can be a critical issue, ex. in hospitals where a new EHR may be replacing an older system. In such a dynamic place where the system is constantly being used, consideration needs to be made to ensure that no data is lost during the transition and sometimes downtime procedures may need to be used for a short time as the switch is being made.

3)   It is important to ensure that an adequate amount of **vendor/developer support** will be available during the conversion process, both in-house, if needed, as well as by phone.

DOCUMENTATION:

Comprehensive documentation for all functions provided by the EHR is needed. It should be on-line and easily accessible from each function. Optimally, it should also be available in hardcopy, especially during training, so that users can enter their own notes and be able to use it as a personal reference.   As with training, it is important that the documentation reflect not only the EHR's basic functions, but how they are used in actual practice.   The documentation should also be updated whenever any changes/additions are made to the EHR.

Ongoing Support

CUSTOMIZATION:

If you anticipate a need for additional customization after you implement the EHR, you should discuss with the vendor the extent to which you will be able to do this yourself and, if not, whether this is a service they are able to provide. If they do provide customization support, you would want to get some idea as to how quickly they would be able to respond to a particular request.

SOFTWARE UPDATE PROCESS:

These are updates the EHR vendor makes and are typically to provide additional functionality. In rarer circumstances, they could also be to fix a problem that has been detected.   The vendor should be able to provide a detailed plan of how they expect to implement these updates, both on a scheduled and as needed basis, as well as the anticipated impact on the availability of the EHR during this process.

TECHNICAL SUPPORT:

It is extremely important that the EHR vendor provide a robust set of technical support services.   Key elements include:

1) **Availability** → Weekdays, weekends, hours/day (time zone considerations). This needs to match your own needs.

2) **Responsiveness** →Once you report a problem or need some kind of help, how quickly can you expect that help or a resolution to the problem.

3) **Disaster Support** → In the event of a significant unplanned downtime, it is crucial for the vendor to provide additional support in order to minimize the impact on a customer's daily functioning, particularly with regard to direct patient care.

4) **Contact Modes** → This is typically by phone and, optimally, includes the ability for the vendor to take remote control of your EHR to fully investigate a problem. For large customers, it is important to consider the need for onsite vendor support if a significant upgrade/change is made to the EHR.

USER COMMUNITY:

Once you begin using an EHR, it is often helpful to be able to communicate with other customers. This can be accomplished by the establishment of user groups for a specific EHR either through the vendor or by the customers, themselves.   These groups can either meet during relevant conferences or independently in person and/or on-line.