Data Migration Lessons Learned: One Facility Relates Hard-learned Best Practices After Migrating to a New EHR

By Neysa Noreen, RHIA

During the planning stages of a new electronic health record (EHR) implementation at Children's Hospitals and Clinics, Minnesota's PACE clinic, discussions began regarding what needed to be done with the legacy EHR's historical data. Discussions moved quickly to migrating the data from the legacy EHR into the new system. But a red flag was raised when IT initially indicated "the data migration would be easy." After completing two master patient index (MPI) migrations and converting from a two medical record number (MRN) series into one MRN series, it was expected that an EHR data migration would not be easy. Even with a successful data migration, those involved in the implementation project at the PACE clinic learned many hard lessons along the way. PACE clinic's experience with the migration and their lessons learned can be broken into project categories that impacted the implementation team—vendor commitment, resources, planning, mapping, migration, and communication.

Get Vendor Commitment in Writing

Adequate vendor engagement is critical to the success of a data migration project. Both the legacy EHR vendor and the new EHR vendor must be committed for the duration of the project. There were many times during PACE clinic's project when the EHR vendor told the implementation team that time would need to be scheduled to work on the project. Unbeknownst to PACE, the vendor resources assigned to the clinic were also assigned to another project, resulting in inadequate resources from the vendor. PACE clinic learned the hard way that a signed agreement with all vendors documenting their resources, time, and commitment must be in place before the project begins.

The implementation of an incentive plan is a good idea to help keep the vendors from breaking the agreement. It was another lesson learned that resulted in many project delays. Experience shows that vendors exaggerate their capabilities, so take caution and get site references when possible that support vendor capabilities. Though the EHR vendor indicated that they had previously completed multiple data migrations, unfortunately not all data migrations are the same. PACE clinic was migrating data into a production database being used by another site and it was learned that the vendor's other migrations lacked this experience. Slight differences can result in major impacts to the project. A written statement should be obtained from the vendor listing what the vendor can and cannot do or what they have and have not done before signing a contract.

The EHR vendor would tell the implementation team at PACE clinic they could not perform requested tasks. After some pushing and bringing forward concerns, requested tasks were successfully completed. The lesson learned—be persistent. A final contract suggestion that organizations planning a data migration should follow is including the requirement of multiple test migrations and the correction of EHR vendor errors at no additional charge. In PACE clinic's experience, the EHR vendor would push back—saying the implementation team caused the error. This resulted in a lot of back-tracking on the facility's part to prove the steps were taken. In a couple of instances, the implementation team and the vendor agreed to split the fault and pay a lower fee than the vendor originally charged.

Double Check Resources are Available

Making sure key resources are available is just as, if not more, important than planning the project. Key resources need to be involved from the beginning stages of the project. For example, the health information management (HIM) team got involved after the project's data mapping had been developed and approved, which resulted in redundant tasks for the rest of the team once the HIM members challenged previously made decisions. The challenges were valid, resulting in mapping modifications.

Key resources should include, but are not limited to, HIM, IT, and clinical site members, including providers, medical assistants, front desk and office managers, the legacy EHR vendor(s), the new EHR vendor, and the legal or compliance department. If

there are multiple practice sites involved in the migration, resources from each site need to be involved in the event that variations exist between the sites. If possible, having detail-orientated professionals involved will assist with the success of the project. The PACE clinic implementation team was fortunate enough to have sponsors who supported them while making tough decisions. In addition to getting HIM involved from the beginning, PACE clinic officials also noted it would have been valuable to have assigned a dedicated project manager to the transition. The project was too large for two IT professionals to manage while supporting another site that had gone live on a new EHR system just a few months prior.

Factor In Enough Time to Plan

Experience shows that everyone seems to know how important planning is, but when time runs short planning also falls short. This means the planning phase gets shortened and critical elements get forgotten. It is critical to allow enough time for the planning phase.

The planning phase involves identifying each step that needs to be accomplished for a data migration, and accounting for the resources responsible for each task. Here is where the project plan is developed. Make sure all involved parties review and agree to the project plan. Everyone should be allowed to recommend or make changes to the plan as needed. This is when the project scope is defined and, once approved, only critical elements should be changed. Enough time should be allocated to conduct a minimum of three rounds of testing until the migration is complete. The PACE clinic implementation team completed two rounds and would have had less anxiety if they could have completed an additional testing round. PACE clinic missed the initial go-live date because of inappropriate planning and an inadequate amount of time allocated for a successful test migration. Remember, unforeseen complexity can increase testing migration time, so build in a buffer and estimate heavy testing work.

Proper Mapping Ensures a Complete Data Transfer

Appropriate mapping is necessary to have a successful data migration. While reviewing the discrete data elements and clinic notes, the PACE clinic implementation team identified that not all discrete data elements were printed onto the clinic note. This resulted in a need to work with PACE clinic's legacy EHR vendor to add these elements and run a script to populate all historic documents as needed. This was important to make sure a complete and accurate document would be released when requested. Providers documented the same data elements in multiple locations, resulting in the need to map multiple discrete elements from the legacy EHR to one location in the new EHR. If a current state analysis has been done with each provider, it will identify how each provider documents differently and in different locations. Documenting in different locations, as PACE clinic found, resulted in modifying mappings and modifying the extracts pulling the data from the legacy EHR. A current state analysis could have prevented this additional work in the middle of the project.

The implementation team at PACE clinic had three takeaways from the mapping process:

1. Make sure any document or image mapping is as detailed as possible. The PACE clinic implementation team loaded clinic notes from the legacy EHR using the document name of master_IM's, which is how they were known in the legacy EHR system. But because of layout and display differences in the new EHR system, the users found searching for specific notes difficult. Knowing this, the PACE clinic implementation team would have been more detailed (i.e., calling the notes "well child checks" or "ill visits").
2. It is important to review mapping with the entire transition team prior to final sign-off. The PACE clinic implementation team broke mapping into subgroups, but did not review it as a large group. After one member of the team left prior to go-live, the remaining team members started questioning their mapping since the team members didn't understand the departed person's reasoning. Reviewing the final mappings as a team allowed the team to ask questions and understand why items were mapped a certain way.
3. Understand the details of how the vendor is interpreting and loading the data. The PACE clinic implementation team completed mapping of medications using the medication name and dose. The vendor mapped the medication by NDC code, resulting in discrepancies from the legacy EHR. The legacy EHR did not have all updates completed, resulting in old NDC codes, incorrect doses, and discrepancies. The implementation team must understand all updates that have and have not been completed to the legacy EHR and know how the new EHR vendor will be using this information.

Test, Test, and Test Again During Migration

After data mapping was finished, an encounter history load was completed. Discrete data elements and documents were associated to the historical encounters loaded in the new EHR. After the test history load, the new EHR required a provider be associated to each encounter. PACE clinic chose to use the medical director if the provider from the encounter history file could not be pulled.

Testing, testing, and more testing is critical to identifying all of the unique elements from a facility's legacy EHR. One of the best ideas the implementation team had prior to starting the test migration was identifying 50 patients to use as a test subset. This small sample of simple to complex patient cases helped to identify issues quickly. The smaller sample size allowed the team to get to know the patients in detail, which allowed them to easily tell when documentation was incorrect. This also allowed the implementation team to get new extracts quicker because a full population did not need to be pulled. The sample population included unique situations such as twins, complex patients, and patients receiving allergy injections.

Extracting the data from the legacy EHR was much more complicated and difficult than importing the data into the new EHR. Issues identified while testing the sample population ranged across the board. Discrepancies in the legacy data were found and the clinic needed to make a decision about whether to fix the discrepancies or leave them as is. The decision was made to fix all identified documentation issues in the legacy EHR system prior to the final data pull.

Another identified issue was providers completing late documentation. A firm stop date for providers to complete their documentation backlog had to be communicated. This was a challenge for one provider who had a six-week backlog. With the help of the clinic manager and support from the project sponsors, all documentation was completed prior to the stop date. After the stop date, staff could not make changes to old documentation because the new data would not get extracted after the final data pull. If changes were made in the legacy EHR system, they would need to be manually entered into the new EHR system.

Because of the length of time it would take to extract and import the data, the clinic was required to complete dual data entry into both EHRs for one week prior to the conversion. Two super-users were responsible for monitoring the dual entry process to make sure everything was completed correctly. The implementation team still had some concern that users had documented in the source system after the stop date. To ensure all changes made after the stop date were identified and captured, the legacy EHR vendor ran multiple queries to identify changes. Any new data found could not be imported, so the users had to manually enter the data into the new EHR.

Once testing was complete it was important to get sign-off from all vendors confirming extracts and imports would not be modified. PACE clinic's legacy EHR vendor slightly modified extracts to help with performance. This was identified after the data was uploaded into PACE clinic's new EHR production database. Fortunately, nothing major happened except some formatting changes, but sign-off would have helped prevent this risk.

Break Down Communication Barriers

Many of the issues encountered were caused by communication barriers. English was the new EHR vendor's second language which resulted in difficulties explaining concerns and understanding the vendor's explanations. Using a standard document for changes would have helped prevent some confusion with the new EHR vendor.

Because a file transfer protocol (FTP) process was used, password-protected files were needed. Creating a master file of passwords would have helped team members remember these passwords. It is recommended to remove passwords from the files as soon as they have been received or sent, as new passwords can always be added. It also is important to have a central location and format to document any changes to the project. During the end of the project when the timeline was getting tight, the implementation team found themselves asking why certain decisions were made and second guessing the decisions. Having this information clearly documented prevents the need to look through old e-mails or other documentation.

Now that this project is complete, PACE clinic staff is grateful to have had the data migration opportunity. While many hard lessons were learned ranging from planning, vendor commitment, user differences, and communication, nothing was a plan stopper. The project was considered a huge success. Months after the data migration had been completed the end users still speak highly of the experience. Key contributions to this success included having the right resources and stakeholder support, which allowed push-back to the new EHR vendor when necessary. The support of the legacy EHR vendor and a dedication to

succeed by the team members were also essential. In addition to the work, there was a lot of fun and laughter as well. The end result proved a final lesson—a great team really does equal great success.

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