

What data shall we convert?

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When a medical practice converts from one practice management system or EMR system to another the most fundamental question to ask is **“What data shall we convert?”** The obvious answer to this question is **“everything”**. If you have ever been involved in a system conversion you understand why this never happens. This short paper reviews the set of possibilities that fall below “everything”.

First let's divide the set of all data in your old system into three broad categories:

- Highly structured reference data (physicians, diagnosis codes, CPT codes, etc.)
 - Highly structured transaction data (charges, payments, patient vitals, etc.)
 - Unstructured data (patient notes, scanned images, etc.)
1. **Highly structured reference data** refers to the set of data elements that surround the key dimensions of your practice and are essentially static or change very slowly over time. A term you may have heard used before when talking about this type of data is a “master file”. The most common examples of this are Patient Master, Procedure Master and Diagnosis Master. Each master file usually contains a set of attributes. Think of each master file as a spreadsheet with a set of columns that represent something important about that particular dimension of the practice and each row representing an individual instance of the dimension. If you are like most practices, the biggest spreadsheet will be the patient / guarantor master with potentially tens of thousands to hundreds of thousands of rows. Procedure, Diagnosis, Adjustment Reason, Insurer/Payer, Location/Place of Service, Physician/Provider are typically much smaller with hundreds to thousands of rows.
 2. **Highly structured transaction data** refers to the set of data elements that are captured at the bill, charge and payment line levels. This data set represents the interaction of the reference data “players” each time something significant happens (e.g. a patient is seen/service is rendered or the billing and subsequent payment stream is recorded). For most practices, the number of rows in these transaction data sets is hundreds of thousands to millions.

In addition to large volumes of data, our experience working with different systems has demonstrated to us that each system designer chooses to “represent” this data differently in their database design. More on this later.
 3. **Unstructured data** refers to the images and textual data stored in the system. Just think of all of those notes about patients, scanned images of insurance cards etc. Volumes in this category are typically many per patient so tens of thousands to hundreds of thousands are likely.

Now that we have defined the data categories, let's quickly review the motivation for converting data in the first place. At Claritee, we tend to look at the world from two perspectives:

- Operational perspective
- Analytical (or reporting) perspective

1. **Operational perspective** - As the name implies, the operational perspective focuses on the operations of the business. What data do you need in your new system to support the operations of the practice? What do you need to see patients and get paid? You will certainly need all of the highly structured reference data. So for each master file you need to decide on the approach you will use to get the data into the new system. For the patient master you will likely want an automated conversion, data entry of that large a number of records is inefficient and the frequency of errors may be significant. The other master files you may be able to perform manual data entry. Automated conversion is also a possibility. In some cases you may choose this time to "clean up" these data sets during the conversion process.

Assuming this conversion goes well, you should be able to process new patient visits and new claims through the new system. Hurray, we are finished right? Right? Well, maybe. For some period of time you will be processing claims in both systems. The open claims in the old system will eventually run off and you might be tempted to close the old system down. Unfortunately, the reality is that there are still large amounts of data stored in the old system that is useful from an operational perspective. The need for the ability to look at history to support operations will exist for a long time. So what to do?

Conversion of the highly structured transaction data is most likely infeasible. The primary reason is the one we already mentioned, the new system will represent this data in a different way, making moving the old data to the new system technically very challenging. If you chose to clean up the master files in the new system the referential integrity of the transaction data will be compromised because an old procedure code may no longer exist. All is not lost though as most modern practice management systems and EMR systems will support the import of documents and their association with a patient. We recommend you consider building a single document per patient that summarizes the key transactional events in the history of the patient. Also think about being selective about what patients to do this for. For example, do this only for active patients. Although your definition of an active patient may be different from ours, you can undoubtedly reduce the number of patients you do this for.

Conversion of the unstructured data is possible. Using the import mechanism in the new system, we suggest you consider creating a single document per patient that contains all of the note (textual) information gathered on that patient in the old system. This removes a big operational reason for keeping the old system running.

2. **Analytical / Reporting perspective** - Perhaps if you do all of this, you will no longer need the old system from an operational perspective. What about the analytical / reporting perspective though? From a management viewpoint, there is a need to measure revenue, productivity and potentially profitability to understand how things are changing over time. The historical data required for this activity is still in the old system. As we have already described, the conversion

of the transaction data is not feasible so you will never have a consolidated view of all of your data, both old and new. That is, unless you think outside of the box.

We believe the only solution to the analytical perspective is to take a copy of your old system data and move it into a reporting database. This provides you with a permanent store of your old system data without the need for the old system itself. Any historic reporting can be performed out of the reporting database. If you want, you can even copy your new system data into the reporting database where you can perform consolidated reporting. This is obviously more effort but depending on your analytical needs it may be worth considering.

We hope this short paper has given you some insight into what is possible when dealing with a conversion from one system to another. Below are some questions to consider before developing a data conversion strategy. Your choices will depend on your practice needs and constraints. Please feel free to contact me at kjones@clariteegroup.com if you need assistance with this process. Good luck!