

Data Management Handbook

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1. Introduction to Data Management

When your clinic implements an electronic medical record (EMR), regardless of whether you have a paper-based clinic or you are using an EMR, you will need to perform data management activities. Data management is the approach to transferring (data migration) and/or retaining (records retention) patient demographic and clinical data. The data management process includes extraction, loading and retention of patient-related data.

This document provides you with the information you need to choose the appropriate data management solution for your clinic.

There are three types of migrations that may take place:

A. Transition from paper records to an EMR

Your chosen EMR vendor will use your patient demographics to populate your new EMR with records. Your list of patients will come from either your current billing and scheduling system or Alberta Health. You will have to determine how you wish to proceed with the other information stored in paper charts.

B. Upgrade from one EMR to another with the same vendor

Your patient demographics and clinical information will be migrated from the current EMR to the new EMR. You will have to work with the vendor to make sure the data migration meets your expectations.

C. Move from one EMR to another with a different vendor

When your clinic transitions to a different vendor, you will need to consider transferring patient data to support both continuity of care and clinic operations. You will need secure and effective migration of data, which includes both data transition and records retention.

Each clinic's data management solution is unique. The optimum solution for any situation depends on a variety of factors including your clinic's unique use of its current EMR, the completeness of existing data, the existing EMR vendor, the new EMR and the specific needs of the physician and/or clinic.

As a physician (custodian), it is solely your responsibility to make decisions related to data management and to ensure those decisions meet medical legal requirements.

2. Data Assessment – Custodian Assessment

Prior to choosing the new EMR, it is a good idea to assess your data management process, custodial responsibilities, privacy requirements and specific data migration options available. This information helps you make an informed decision when choosing the most appropriate EMR for your needs. After you have chosen an EMR, you will work with your EMR vendor(s) to develop the most appropriate data management plan.

Assessment Objectives

Objectives of a custodian assessment:

- Develop a custodianship strategy
- Clarify the data migration and retention processes and options
- Mitigate deployment risk surrounding data migration
- Improve physician and clinic understanding of patient privacy and records retention requirements
- Provide information to support the EMR selection process

3. Custodial Responsibilities

As a physician, you have health information in your custody and, as a custodian of this health information, there are a number of obligations you have to meet when transitioning to a new EMR.

The Standards of Practice established by College of Physicians & Surgeons of Alberta (CPSA) (revised July 2011) outline expectations for physicians in regards to the creation, retention and security of patient records (Standard 20 and 21). Physicians are responsible to ensure proper maintenance and adequate retention of the medical records under their responsibility when transitioning to a new EMR, under both the *Health Information Act* and CPSA guidelines. These detail the requirements applicable to practising physicians so that, if patients were to see another physician for any reason, the change of practitioner would be minimally disruptive to the continuity of care.

Responsibility	Action Item
Duty to Protect Health Information	
<p>Ensure confidentiality of health information:</p> <ul style="list-style-type: none"> • An Information Manager Agreement (IMA) is required with any vendor requiring direct access to health information, to use, store, process or dispose of on behalf of a custodian <p>Ensure security/integrity of health information:</p> <ul style="list-style-type: none"> • Health information must be protected during the data extraction, conversion and loading processes • Custodian/clinic receipt and consideration of vendor advice on privacy and security safeguards for their EMR and patient information 	<ul style="list-style-type: none"> • Review and sign IMA before any data is shared with new EMR vendor, data migration vendor or data retention vendor • Need to limit access to the data migrated and data retained from the former EMR • Review and sign Vendor/Physician Sign-off On Advice (VSOS) and implement safeguards
Duty to Ensure Accuracy of Information	
<p>Ensure accuracy of patient records:</p> <ul style="list-style-type: none"> • Custodian must undertake quality assurance to verify the accuracy of the information transferred to the new EMR <p>Ensure completeness of patient records:</p> <ul style="list-style-type: none"> • Custodians must ensure the patient records contain all the information expected to be transferred to the new EMR • Health information not migrated to the new EMR must be retained and accessible to meet medical-legal requirements 	<ul style="list-style-type: none"> • Complete data migration validation prior to full load to identify and address possible errors • Undertake data quality validation after migration to look for inaccurate or missing data • Develop a records retention strategy to ensure patient records will be maintained, retained and protected

Responsibility	Action Item
Duty to Identify Responsible Affiliates	
<p>Chief privacy officer (primary responsible):</p> <ul style="list-style-type: none"> • Must be a custodian of health information <p>Privacy officer (day-to-day implementation):</p> <ul style="list-style-type: none"> • Must be a responsible affiliate to a custodian (clinic manager or other responsible staff member) 	<ul style="list-style-type: none"> • Act as the primary contact with data migration vendors and ensure proper preparation of this initiative • Ensure the change in system is reflected in the policies and procedures and in the privacy impact assessment (PIA)
Duty to Establish or Adopt Policies and Procedures	
<p>Policies and procedures:</p> <ul style="list-style-type: none"> • Must be documented and address administrative, physical and technical safeguards • Monitor and periodically assess safeguards in place 	<ul style="list-style-type: none"> • Implement, monitor and enforce provisions in the clinic's policies and procedures documents
Duty to Prepare and Submit a Privacy Impact Assessment (PIA)	
<p>PIA must be prepared and submitted:</p> <ul style="list-style-type: none"> • Data migration is a significant undertaking with associated risks, therefore, a PIA must be prepared and submitted to the Office of the Information and Privacy Commissioner (OIPC) of Alberta for review 	<ul style="list-style-type: none"> • Work with the EMR vendor to help ensure the PIA contains the most accurate and up-to-date information pertaining to this initiative

4. Options for Populating the EMR with Patient Data

There are several options available for adding patient data to a new EMR.

Option 1: Fresh Start

Clinic Type	Description	Advantages for Physician	Disadvantages for Physician
Paper records EMR with a different vendor	<ul style="list-style-type: none"> Import patient demographics as available from billing and scheduling system, current EMR or Alberta Health No clinical data is migrated to the new EMR 	<ul style="list-style-type: none"> Avoids data entry errors/ inconsistencies from past use 	<ul style="list-style-type: none"> Data is only available in records retention files

Option 2: Limited Patient Data Migration

Clinic Type	Description	Advantages for Physician	Disadvantages for Physician
Paper records	<ul style="list-style-type: none"> Import patient demographics from billing and scheduling system or Alberta Health Perform chart abstraction exercise and manually key* or scan in clinical data identified as critical for continuity of care 	<ul style="list-style-type: none"> Minimizes data entry errors/ inconsistencies from past use Basic patient data is available in the EMR at go-live reducing the need to refer to other sources 	<ul style="list-style-type: none"> Require physician time to identify critical elements to be migrated Manual keying of data, or non-standard data imports creates opportunity for data errors
EMR with a different vendor	<ul style="list-style-type: none"> Import patient demographics from current EMR or Alberta Health demographic download Import clinical data (through data migration or manually keying process) identified as critical for continuity of care 		

Option 3: Full Patient Data Migration

Clinic Type	Description	Advantages for Physician	Disadvantages for Physician
Upgrade EMR with the same vendor	<ul style="list-style-type: none"> Convert all patient demographics and clinical data from current EMR to new EMR 	<ul style="list-style-type: none"> Data critical for continuity of care resides in new EMR reducing need for accessing other sources 	<ul style="list-style-type: none"> Not applicable
EMR with a different vendor Approach 1 - Import Data	<ul style="list-style-type: none"> Import full ToPD* export from current EMR to new EMR Includes patient demographics and clinical data as specified in the ToPD standard and any additional clinical data elements required by physician 	<ul style="list-style-type: none"> Data critical for continuity of care resides in new EMR reducing need for accessing other sources 	<ul style="list-style-type: none"> Data entry errors/ inconsistencies are perpetuated forward in the new EMR
EMR with a different vendor Approach 2 - Chart Abstraction	<ul style="list-style-type: none"> Identify a sub-set of patient data that is critical for continuity of care After the new EMR goes live, re-key the sub-set of patient data into the new EMR using a "just in time" approach 	<ul style="list-style-type: none"> Data critical for continuity of care is entered only when required into the new EMR reducing need for accessing other sources 	<ul style="list-style-type: none"> Approach will take upwards of a year as patients are scheduled forward

Not all options will be available for export and import of data. It is important you consider your situation and discuss with both your current EMR vendor (if applicable) and your new EMR vendor to determine which approach best meets your needs.

* The Transfer of Patient Data (ToPD) is the format used to transfer the medical summary into the new EMR.

5. How Does the Data Migration Process Work?

What Data Gets Migrated?

The Health Information Standards Council of Alberta (HISCA) has identified over 300 data elements comprising the medical summary to support the continuity of patient care. These make up approximately 80% of the existing EMR data. The Transfer of Patient Data (ToPD) is the format used to transfer the medical summary into the new EMR.

The HISCA medical summary 300 plus data elements, include:

- Patient Demographics
- Lab Results
- Medications
- Encounters
- Condition/Diagnosis/Problem
- Allergies

The complete list and details are available at www.health.alberta.ca/documents/HISCA-POS-Transfer-Data.pdf.

Data to be migrated is either patient demographic or clinical information. While demographic information should always be migrated, you have the option to either migrate all other patient information as well or to leave it out of the migrated data set. In this case, you will have to address the question of data retention to meet medical-legal requirements.

It is important to note that the referring physician practitioner identification number (PRAC ID) is not part of the ToPD standard. The PRAC ID may be exported from your EMR (typically in the form of a physician address book) in flat-file format by your current EMR vendor and provided to your new EMR vendor for importing. A method of obtaining a complete physician PRAC ID listing is to have your future EMR vendor download a file containing PRAC IDs off of HLINK from Alberta Health. Billing and scheduling information is not part of the data migration.

Data Extraction

If you are moving from an EMR to another EMR with a different vendor, you may arrange for data extraction services from your current EMR vendor. Your current vendor will provide the data extract and records retention solution, including a six-month access to the outgoing EMR for billing purposes.

Data Loading

Once the data has been extracted from your current EMR, the data will be loaded into the new EMR. Prior to loading the full set of records, you will receive a sample data set in the new EMR to ensure it works as expected. Once you approve this data sample, your new EMR vendor will load all data files into the EMR.

If you choose to also migrate clinical patient data, you may decide to have the migrated data available on the day of go-live or a short period after go-live. Discuss which option would be best for you with your new EMR vendor.

6. Records Retention

Under the *Health Information Act* and guidelines by the College of Physicians & Surgeons of Alberta, patient information must be retained for a specific period of time. Data not migrated into the new EMR solution will need to be retained through alternate means to ensure you are meeting your medical-legal obligations.

Some options include:

A. Complete Data Export in PDF

A complete data export per patient, including audit logs, to printable PDF format. These PDF files can be placed on a local server to ensure accessibility within the clinic or the PDFs can be reattached to the appropriate patient records in the new EMR.

B. Export to Relational Database

A complete record output of all patient data will be stored in a relational database. A relational database consists of a collection of tables that store particular sets of data using common characteristics within the data set. This database uses a structured query language (SQL) that standardizes the structure and data definitions allowing the database to be fully searchable.

C. Preservation of Existing System

A read-only copy of the current EMR can be used to archive current patient records and audit logs. The cost, duration and level of support will need to be negotiated with the current EMR vendor. Some vendors may offer a records retention service using an application service provider* (ASP) repository for use by the physician. The information within the existing EMR may also be virtualized as a records retention option, in which case licensing costs may still apply.

The available options will depend on your EMR vendor.

* Hosting EMR system from an approved central data centre. Data and EMR application software is hosted by the vendor, outside the clinic.

7. Data Validation

When performing data migration, it is critical for physicians to work with your data migration service provider(s) to perform data validation. Even though each data migration service provider will have a data validation process to work through, it is important physicians perform their due diligence regarding validation, as the physician is ultimately responsible to ensure the accuracy and completeness of patient records. The following data validation points should be considered:

- Prior to the extract, consider taking two steps in the current EMR:
 - Get a record count of all records.
 - Select ten patients per physician, and for each record, their name, unique identification number, and the number and type of attachments in their record. Compare the number and type of attachments in the extract to the original EMR record and document the results of the count and comparison.
- After the extract, check the new EMR to see:
 - If the number of records matches the number in the original extract.
 - If your ten patient records had the demographics come across as expected (that is, the correct data is associated with the correct patient and the data is mapped to the correct field in the new EMR). Also ensure all of the attachments (for example, consult reports, referral letters, scanned lab test results) that are part of the patients' records, have also been extracted.
- Document the data quality assurance testing steps performed, the records checked and the results of the comparison work.
- The migration vendor must document the processes used to extract the data and the EMR vendor must document the processes used to import the data. Both documents must be stored with the physician's records.

For records retention, you must ensure all of the patient records stored in the current EMR are extracted in PDF to serve as an archive. This verification can also be done through a comparison of the number of records in the EMR and in the archive. Your current EMR vendor can provide instructions on how to get the record count from your current EMR if you do not know how to run the record count report.

APPENDIX A – Additional References

Additional Resources
<p>The Canadian Medical Protection Association (CMPA) abstract entitled “Transitioning to electronic medical records,” published June 2010 https://www.cmpa-acpm.ca/cmpapd04/docs/resource_files/perspective/2010/02/com_p1002_9-e.cfm</p>
<p>The CMPA abstract entitled “A matter of records: retention and transfer of clinical records”, published March 2003/Revised May 2008 https://www.cmpa-acpm.ca/cmpapd04/docs/resource_files/infosheets/2003/com_is0334-e.cfm</p>
<p>The CMPA article entitled “Safeguarding your patients’ privacy when data is stored on computers”, published October 2003/Revised March 2008 https://www.cmpa-acpm.ca/cmpapd04/docs/resource_files/infoletters/2003/pdf/com_il0330_1-e.pdf</p>
<p>The CMPA article entitled “Minimizing medico-legal risk when using technology”, published June 2008 https://www.cmpa-acpm.ca/cmpapd04/docs/resource_files/infosheets/2008/pdf/com_is0884-e.pdf</p>
<p>Link to HISCA document on ToPD Medical Summary Document http://www.health.alberta.ca/documents/HISCA-POS-Transfer-Data.pdf</p>

APPENDIX B – Acronyms

Acronyms	Definition
ASP	Application Service Provider
CMPA	Canadian Medical Protection Association
CPSA	College of Physicians & Surgeons of Alberta
EMR	Electronic medical record
HIA	<i>Health Information Act</i>
HISCA	Health Information Standards Committee Alberta
IMA	Information Manager Agreement
PIA	Privacy impact assessment
PRAC ID	Practitioner identification number
SQL	Structured query language
ToPD	Transfer of Patient Data
VSOS	Vendor/physician sign-off on advice

