

Merging Master Patient Indexes (1997)

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Background

As a result of healthcare reorganization through mergers, alliances, and acquisitions, a growing number of facilities are merging their master patient (person) indexes (MPIs). An accurate MPI, whether in paper or electronic format, may be considered the most important resource in a healthcare facility because it is the link tracking patient, person, or member activity within an organization (or enterprise) and across patient care settings. The MPI is needed to:

- Accurately match persons being registered for care with their record
- Minimize duplicate records within a facility and across patient care settings
- Facilitate merging MPIs to create enterprise MPIs
- Facilitate links with clinical data repositories, pharmacies, and outside laboratories
- Facilitate access to longitudinal (lifetime) patient records

The MPI may index patients, persons, members of healthcare plans, guarantors, physicians, healthcare practitioners, payers, employees, employers, or others. It may also be called an enterprise master patient index (EMPI), enterprise patient index (EPI), corporate person index (CPI), or another similar description. MPIs shared by two or more care centers may be considered an enterprise, corporate, or multifacility MPI. Preparation for developing an enterprise MPI is an extensive, multifaceted project that routinely takes six to 18 months. An enterprise must determine whether the project to merge MPIs will be completed by facility staff or outsourced. If it is outsourced, vendor selection should be based on a proven success record from comparable projects with similar computer systems. Further, when merging more than one MPI, preparation activities within each facility may be done simultaneously. However, it is recommended that only one MPI at a time be added to the enterprise MPI. For a successful conversion, input should be obtained from system/ department managers for any computer application where patients are identified. For example:

- Health information management (HIM) director/operations manager
- HIM MPI staff
- Information systems
- Pathology/laboratory
- Transcription
- Radiology
- Patient intake/registration
- Registries
- Business office/patient accounts
- Other ancillary computer systems managers

Definitions

- Algorithm -- Mathematical formula using a combination of weighted MPI data elements to determine the probability of MPI duplicate or overlap entries
- Duplicate entry/file -- More than one entry/file for the same patient or more than one patient for an identification number in a facility's MPI
- Overlap entries/files -- More than one MPI entry/file for the same patient in two or more facilities within an enterprise

Note: Duplicate entries may represent information capture errors, while overlap entries do not.

Staffing and Space

Determine staffing needed for the project (before, during, and after conversion) and ensure that man hours are available. Include staff needed at all facilities in all departments typically impacted when merging MPIs (including HIM, radiology, clinic, pathology/laboratory, blood bank, information systems, registry staff) for the following processes:

Project Management and Coordination

- Project planning and time line management
- Coordination of workloads
- Problem resolution
- Computer terminal access and space
- Accommodations for temporary staff (if applicable)
- Other

Education and Training

- Staff training
- Quality control
- Verification of duplicate or overlap entries
- Procedures, policies, definition of terms, etc.
- Knowledge of computer system
- Other

Labor

- Computer merge
- Record retrieval and filing to verify duplicate or overlap entries/ files and/or to physically merge medical records
- Physical merge of medical records when a patient has been assigned more than one identification number or has records in more than one location
- Other

The number of departments/areas impacted, the project completion time line established, the number of duplicate and overlap entries/files, and, if applicable, process changes will contribute to the amount of staffing and space required. A consulting firm quotes an average of \$5 to \$10 per pair to correct a duplicate with key variables being labor cost, inclusion of radiology, ease of computer merge, and merging records on microfilm.

Identification of Duplicate and Overlap Entries/Files

Obtain a list of possible or probable duplicate or overlap entries by using an algorithm or reports of duplicate MPI data elements -- individual elements or combinations of elements. Data elements needed to determine potential duplicates or overlap entries are the patient name, date of birth, social security number, gender, and if available, alias or previous names. Note: Duplicate entry/file rates range from less than 1 to 19 percent with a 5 to 10 percent rate being the norm. In addition, there are two commonly used linking or search approaches--deterministic and probabilistic. Deterministic linking is an attempt to establish an association between two files by searching for an exact match against a given set of search keys, e.g., the medical record number, partial name, or a combination of other data element values. It is a binary methodology used by most computerized systems available today. Probabilistic linking compensates for discrepancies between corresponding items recorded on two files; it does not require the exact match of deterministic linkage. This process uses all identifying information in the files and may attach a weight for matching specific variables in a file such as last name, first name, maiden name, date of birth, etc.

Duplicate and Overlap Entries/Files

Determine which duplicate and overlap entries to merge. If the entire MPI is not merged, selection criteria may include dates of activity, patient types, account types (e.g., institutional), or other criteria. Determine when to merge duplicate and overlap entries. This may be done prior to merging MPIs, at time of admission following merge, or other specified time. It is not necessary to merge both duplicate and overlap entries at the same time. Determine the recommended percent of "clean up" prior to merging. Establish procedures for merging duplicate and overlap entries.

Computer Conversion

Determine whether to merge or overwrite demographic information for duplicate and overlap MPI entries. Determine also whether to use the most recent or most accurate information or other criteria. Determine minimum data elements to convert. AHIMA recommends:

- Internal patient identification
- Person name
- Date of birth
- Date of birth qualifier
- Gender
- Race
- Ethnicity
- Address
- Alias/previous name
- Social security number
- Facility identification
- Universal patient identifier (if established)
- Account number
- Admission or encounter date
- Discharge or departure date
- Encounter/service type
- Patient disposition

Determine whether to collapse medical record numbering systems into one for the enterprise MPI. If applicable, carefully evaluate the integrity of software capable of "auto merging" entries/files. If applicable, establish procedures for merging the records of auto-merged entries/files.

Filing System

Consider the impact of the medical record or identification number on the filing system, especially when the social security number is used.

Processes

Determine the impact of decisions on processes, including those of:

- All departments, including HIM, radiology, clinic, pathology/laboratory, blood bank, etc.
- "Mapping" of MPI data to other systems
- Registries, including trauma, cancer, newborn, and other registries
- Patient financial accounts open at time of merge
- Documents, e.g., face sheet, and computer screens
- Record and document storage and retrieval, including those on microfilm and optical disk
- Specimen registration
- Other

Establish or revise written procedures for all processes.

Related Practice Briefs

Related practice briefs published in the *Journal of AHIMA* are:

"Developing Information Capture Tools" (March 1997)

"Master Patient (Person) Index (MPI) Recommended Core Data Elements" (July/August 1997)

Prepared by

AHIMA MPI Task Force:
Lorraine Fernandes, RRA, Chair
Mary Brandt, MBA, RRA, CHE
Dennis Casey, MBA, RRA
Donna M. Fletcher, MPA, RRA
Karen G. Grant, RRA
Christine Petrosky, MBA, RRA
Susan Postal, MBA, RRA
Martha Skeens, MBA, RRA
Vicki Wheatley, MS, RRA
Terry Winter, MEd, RRA, CHE

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Tammye Francis, ART, CCS
Sandy Fuller, MA, RRA
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Harry Rhodes, MBA, RRA

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