One Hospital’s Journey to MPI Data Integrity

Jeanne Day, RHIA, CHAM
Director of Health Information Management & Patient Access

Denise Wrzesien
HIM Operations Manager

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AHIMA
American Health Information Management Association®
GBMC, a 245-bed medical center, is located on a beautiful 72-acre campus located in the Baltimore suburb Towson, Maryland.

GBMC Healthcare includes Greater Baltimore Medical Center (GBMC), Greater Baltimore Medical Associates (GBMA), Gilchrist Hospice Care, and the GBMC Foundation.
Residency Programs - GBMC has five residency programs recognized by the Accreditation Council for Graduate Medical Education: Internal Medicine, Colo-Rectal Surgery, Ophthalmology**, Obstetrics/Gynecology**, and Otolaryngology**.

**Johns Hopkins Integrated Programs
1090 Privileged Physicians

**Faculty Practice** - Bariatric Surgery, Breast Surgery, Cochlear Implants, Colo-Rectal Surgery, Dexa, Family Practice, Fertility Center, General Surgery, Medicine, NeuroSurgery, Obstetrics and Gynecology, Oncology, Ophthalmology, Otolaryngology-Head and Neck Surgery, Pediatrics, Psychiatry.
FY 2014

20,455
Admissions

63,655
Patient Days

3.84
Average Length of Stay

3,893
Births

27,651
Surgical Procedures

52,916
ER Visits
HIM Organizational Chart

Director
Health Information Management and Patient Access

- HIM Operations Manager
  1 FTE

- HIM Team Leaders
  3 FTE

- HIM Assistants
  5.5 FTE

- Transcription outsourced to M*Modal

- Birth Registration Assistants
  1.5 FTE

- Release of Information outsourced to HealthPort
Collect, maintain and release medical records in order to improve patient outcomes and performance in patient care, management and support functions.

HIM maintains patient records created by inpatient admissions, emergency room visits and same day surgeries. These records are maintained in the electronic medical record (EMR). Medical records for patients seen from August 1, 1996 to present are available in electronic format.
HIM Functional Areas

- **Physicians Record Office (PRO*Shop)** – Analyze records for deficiencies as defined by Medical Staff Rules & Regulations. These records are provided to physicians for completion as well as to providers to support patient care and healthcare operations.  
  *The average delinquent medical record rate (charts incomplete over 30 days post discharge) was 7% in 2014*

- **Transcription** - Transcribe Discharge Summaries, History & Physicals, Consultations, Admit Notes and Operative Note for inclusion in the medical record. Transcription provided by M*Modal. 
  *31,898 reports were transcribed in 2014.*

- **Correspondence** - Release health information to authorized requestors, which may include, but are not limited to, physicians, patients, insurance companies, disability and attorneys. Release of information services provided by HealthPort. 
  *16,071 requests were received and released in 2014*

- **Document Imaging** - Prepare, scan and index medical records for inclusion in the EMR. 
  *1.4 million pages were scanned into the EMR in 2014*

- **Birth Certificate Registration** – Birth Certificate worksheets are distributed and collected from parents. This information is entered into the Electronic Birth Certificate system and submitted to Vital Records. 
  *3799 birth certificates were submitted to the Vital Records in 2014*
IT Applications Used by HIM

- HIS & EMR - Meditech Client Server version 5.66
- Document Imaging – Hyland OnBase
- Identity Management – QuadraMed SmartMerge and SmartManager
Identity Management Matters

- Identity management is a significant issue for healthcare organizations.
- The ability to uniquely identify an individual enhances quality, safety and cost control initiatives across the continuum of care.
- Clinicians do not have all available healthcare information for a patient with duplicate records.
- Organizations incur increased liability when complete records are unavailable, resulting in inappropriate care decisions.
- There is an increased risk for non-compliance, fraud, abuse and breach of confidentiality associated with inaccurate patient information.
- Errors in patient identification may lead to errors in billing, which ultimately lead to delays in accounts receivable.
- Patient services may be unknowingly duplicated, causing inconvenience and possible harm to the patient, increasing an organization’s financial liability.
Duplicates Beget Duplicates

- Poor identity management is a self-perpetuating problem
- The existence of duplicates in a database presents an environment for creating even more duplicates
- As the number of duplicates in a database increase, so do the organizational costs and liability exposure
- The existence of patient identity management problems undermines the ability of an organization to provide quality healthcare
- Left unresolved, identity management problems can lead to an error in the diagnosis or treatment of a patient
Starting Point

- Potential Master Patient Index (MPI) duplicates were reported by Registration to HIM for analysis and merging if necessary.
- HIS could not produce reports to identify potential duplicates or the duplicate rate which meant that many duplicates were unidentified and unresolved.
MPI Process Improvement

- Identified need for knowledge of existing number of MPI duplicates in preparation for installation of new HIS
- Contracted with QuadraMed in 2001 to perform MPI SmartScan analysis to identify potential MPI duplicates and perform MPI Cleanup
QuadraMed SmartScan Results

- 1,049,303 Records in the MPI
- 33,673 Potential Duplicate Pairs
- Duplicate Error Rate = 6.4%**

**Industry averages reflect a typical duplicate rate of between 5 and 10%**
Initial MPI Cleanup

- Cleanup project outsourced to QuadraMed
- Evaluation of 14,200 duplicate pairs (patients with visits within the 2 years prior to the SmartScan)
- Potential overlays were referred to HIM for evaluation
- Cleanup project took 9 weeks to complete
Ongoing MPI Maintenance

- GBMC purchased QuadraMed’s Identity Management (EMPI) software prior to the MPI cleanup to provide real-time duplicate detection and data stewardship tools.
- HIM staff started reviewing potential duplicates and merging confirmed duplicates prior to the MPI cleanup in order to avoid a “gap” where potential duplicates were not being reviewed.
Process for Duplicate Identification & Merging

• HIM staff review identified potential duplicates in SmartMerge (Data Stewardship Tool) daily (Monday – Friday)
• Confirmed duplicates are marked for merge in SmartMerge and merged with SmartManager which automates the merge process in Meditech.
• Potential duplicates that could not be confirmed are marked as such in SmartMerge and then can be filtered out of the users work list to prevent repeated review of the same duplicates.
Data Stewardship Tool

Data in screenshots and reports is fictional and does not reflect actual patients.
## SmartManager Work List of Duplicates to be Merged

Data in screenshots and reports is fictional and does not reflect actual patients.

<table>
<thead>
<tr>
<th>Record</th>
<th>Chart</th>
<th>Tasks</th>
<th>Note</th>
<th>Asgn</th>
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<th>Alternate ID</th>
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<th>Date of Birth</th>
<th>SSN</th>
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Surviving MRN Decision Tree

1. Do both MRN’s have visits? (No)
2. Does one MRN have visits? (No)
3. Does both MRN’s have same # of visits? (No)
4. Survivor = MRN with most visits

1. Do both MRN’s have visits? (Yes)
2. Does one MRN have visits? (Yes)
3. Survivor = MRN with visits

1. Do both MRN’s have visits? (Yes)
2. Does both MRN’s have same # of visits? (Yes)
3. Survivor = MRN with most recent visit

Survivor = MRN with most recent visit date
Retention of Demographic Information

The following hierarchy of rules are used to determine which demographic information is to be retained:

• Apply naming conventions, when one name represents a full name and the other a nick name or diminutive name, use the full name

• When the patient is a female or a minor child with a last name change, use the name associated with the most recent visit

• Retain the demographics associated with the MRN with the most recent visit, including changing the address, telephone number and race
Overlays

- An overlay is a record identified as being potentially different people having the same medical record number and are a significant patient safety risk because they can result in a patient being treated with someone else’s medical information.
- When reviewed and verified to be different persons, overlay records are separated.
- Potential overlays are identified in SmartMerge and reviewed daily by HIM.
- We average <5 overlays/year.
Impact of New HIS Implementation

• Meditech was implemented at GBMC on October 1, 2004
• Due to the learning curve of registration staff on new MPI search procedures and insufficient MPI search functionality in Meditech, the number of potential duplicates quadrupled and HIM staff could not keep up with the volume
• QuadraMed’s SmartID and SmartSwipe applications were installed in 2008 to provide a better search tool and minimize the creation of new duplicates
SmartID

- SmartID is an advanced person search solution used in conjunction with a registration system to more accurately identify patients and eliminate identity errors.
- SmartID resides “on top of” the various registration system workflows and enables registration staff to quickly and easily search for a person in the QuadraMed EMPI using a combination of different search criteria.
- The search results are returned to the user ranked and sorted in order, from best match to worst match, and color-coded (Green, Yellow or Red) to indicate the quality of the match. This makes it easy for the registrar to select the right record.
How to Use SmartID® to Perform Patient Searches

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SmartSwipe

SmartSwipe allows the user to populate the search fields in SmartID by swiping a driver’s license through a card reader which saves time by eliminating manual data entry and minimizes data entry errors.
MPI Statistics (as of May 2015)

- Records in the MPI – 1,541,394
- Duplicate Error Rate = .07%
- Average Number of Potential Duplicates Reviewed /Month – 230
- Average Number of Confirmed Duplicates Reviewed/Month – 160
- Unconfirmed duplicates are typically the result of Twins/Multiple births, generational match and records with insufficient demographic information to confirm a match.
- Approx. Time Spent Reviewing Potential Duplicates/Day - <60 minutes
Registration Involvement

- Buy in and cooperation of the Registration department(s) is of vital importance
- Patient naming conventions and MPI search procedures should be defined (and adhered to!)
- Completion of a competency test addressing these procedures should be considered prior to giving staff access to register patients
Reporting Results to Registration Areas

- Detailed and summary reports are provided to the Managers of any staff performing registrations.
- These reports were initially distributed weekly – now being distributed monthly.
**No Known Group**

<table>
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<tr>
<th>Detect Date</th>
<th>EMPI</th>
<th>Alternate ID</th>
<th>Patient Name</th>
<th>BirthDate</th>
<th>SSN</th>
<th>G</th>
<th>Address</th>
<th>Phone</th>
<th>Service Date</th>
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<td>hernandez, maria</td>
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<td>--</td>
<td>F</td>
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<td>()</td>
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</tbody>
</table>

**Domain:** EMPI SmartIX  
**Domain:** REGI Central Registration

**Survivor:** 00059336  
**Retiree:** 00077316

**Survivor:** 80140803  
**Retiree:** 321D779D

**Generated by QuadraMed Corporation SmartMerge v7.0 on 6/9/2015**  
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Accountability of Registration Staff

• Patient Access Representatives are given a report of the duplicates they have created on a monthly basis

• Progressive Corrective Action is given to staff after they have created 9 duplicates within a 3-month rolling time-period
Incentives for Registration Staff

Patient Access Representatives who meet or exceed duplicate creation standards (<3/month)** are entered in a monthly quality incentive drawing where four (4) $50 gift cards are awarded

**Additional quality indicators must be met in order to be eligible for the incentive drawing
Lessons Learned/Benefits

• Importance of consistent proactive monitoring and daily cleanup (Monday-Friday)
• QuadraMed’s EMPI tools allow HIM to act on and to correct duplicates quickly and easily
• Built in management reports allow HIM to track cleanup efforts and progress of work
• Potential duplicates can be assigned to staff and management of HIM and Patient Access for review and follow up
Lessons Learned/Benefits (Continued)

• Reports can easily be filtered and sorted to meet HIM’s needs
• Task flags can be set to meet HIM needs (paper records)
• SmartMerge and SmartManager work together to ensure accuracy of MRN merge in Meditech by automating the merge and eliminating manual data entry
Advice

• Gain support of Executive Staff for implementation and for ongoing monitoring and accountability
• HIM /Patient Access collaboration to quickly identify any overlays or duplicates to be rectified in a timely manner
• HIM daily commitment from staff to work Duplicate Reports/Overlay Listing
• HIM Management review of merge decisions prior to merges occurring with SmartMerge
• Consistent use of SmartID by registration staff and regular usage monitoring/enforcement by management
Questions
Contact Information

Jeanne Day, RHIA, CHAM
Director of HIM & Patient Access
jday@gbmc.org

Denise Wrzesien
HIM Operations Manager
dwrzesie@gbmc.org
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