MASTER PATIENT INDEX METHODOLOGY AND DATA

The U of M MiPCT database will contain adjudicated claims data from Medicare, Medicaid, and Commercial Payers (BCBS MI and BCN.) A patient (also referred to as a member or individual) may have claims from each payer, and the claims from each payer may contain a different identifier for the patient. The Master Patient Index (MPI) will create a single master identifier, known as the Master Patient ID (MP ID), for each individual patient that is unique across time periods of the database and allow linkage and identification of patients across the Federal, State and Commercial claims data. The Master Patient ID will allow tracking of the individual patient’s claims experience over time and independent of data supplier.

Methodology:

This document describes the methodology and the multiple matching process Truven Health Analytics has developed to generate a single Master Patient ID for an individual and how the MP ID is being assigned to each payer’s data. Each payer can utilize a unique type of id to identify patients (ex: SSN, internal id plan specific, etc.) and the logic to assign the Master Patient ID to each data supplier is unique as well.

To standardize this, Truven Health Analytics will generate a unique Master Patient Id as a numeric value for each patient. We will initially use enrollment data to confirm if a patient is currently on the Master Patient Index and if we do not find the individual patient, we will create a new Master Patient ID and insert the new record into the table. If a patient is on the MPI and the information is the same, we make no changes to the table. If the patient is on the MPI and the information is different, we generate a new record for the patient with the new information and the same Master Patient ID. Therefore, the Index can contain multiple records for the same Master Patient ID, with variations or changes in name, address, and other attributes. We repeat this process for Medical and Drug claims. We include a source identifier to distinguish the source of the information: Enrollment, Medical, and Drug. We generate a time stamp on the record, to retain the history of changes and to allow reporting on the most current information when desired. When we extract the data for the UM MiPCT system, the extract will include the most current information for each patient along with the five most current values if they have changed over time.

To assign the Master Patient ID to an individual’s data, Truven Health Analytics uses a multiple matching process, using Carrier ID, patient SSN and then patient
name and other demographics, to “find the best match” possible for an individual between the Master Patient Index table and their eligibility and claims data. We created a hierarchy of importance for this multiple match process. Each match attempt has a unique weight of accuracy, which we use to select the “best match” for the unique identifier and we tag the Master Person ID to the eligibility and claims records. During this process, if an individual is not in the MPI Table, we add them and assign a unique Master Patient ID.

Master Patient Index Table:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Type</th>
<th>Size</th>
<th>Description/Code/Source</th>
<th>Current or Historic Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Patient ID</td>
<td>Text</td>
<td>20</td>
<td>Unique Patient Identifier Generated by Truven Health Analytics</td>
<td>N/A – Assigned and retained</td>
</tr>
<tr>
<td>Member Identification Code (SSN)</td>
<td>Text</td>
<td>9</td>
<td>Member Social Security Number</td>
<td>Current</td>
</tr>
<tr>
<td>Member First Name</td>
<td>Text</td>
<td>50</td>
<td>The member’s first name</td>
<td>History – up to 5 values</td>
</tr>
<tr>
<td>Member Last Name</td>
<td>Text</td>
<td>50</td>
<td>The member’s last name</td>
<td>History – up to 5 values</td>
</tr>
<tr>
<td>Member Date of Birth</td>
<td>Date</td>
<td>8</td>
<td>CCYYMMDD</td>
<td>Current</td>
</tr>
<tr>
<td>Member Gender</td>
<td>Text</td>
<td>1</td>
<td></td>
<td>Current</td>
</tr>
<tr>
<td>Member Street Address</td>
<td>Text</td>
<td>50</td>
<td>Street address of member</td>
<td>History – up to 5 values</td>
</tr>
<tr>
<td>Member City Name</td>
<td>Text</td>
<td>30</td>
<td>City location of member</td>
<td>History – up to 5 values</td>
</tr>
<tr>
<td>Member State or Province</td>
<td>Text</td>
<td>2</td>
<td>As defined by the US Postal Service</td>
<td>History – up to 5 values</td>
</tr>
<tr>
<td>Member ZIP Code</td>
<td>Text</td>
<td>11</td>
<td>ZIP Code of member - may include non-US codes. Do not include dash. MN is 5 digit only</td>
<td>History – up to 5 values</td>
</tr>
<tr>
<td>Subscriber Social Security Number</td>
<td>Text</td>
<td>9</td>
<td>Subscriber’s social security number; Set to null if not provided</td>
<td>Current</td>
</tr>
<tr>
<td>BCBSM Carrier Specific Unique Member ID</td>
<td>Text</td>
<td>20</td>
<td>BCBSM’s unique member identifier</td>
<td>History – up to 10 values</td>
</tr>
<tr>
<td>BCN Carrier Specific Unique Member ID</td>
<td>Text</td>
<td>20</td>
<td>BCN’s unique member identifier</td>
<td>History – up to 10 values</td>
</tr>
<tr>
<td>Medicaid Carrier Specific Unique Member ID</td>
<td>Text</td>
<td>20</td>
<td>Medicaid’s unique member identifier</td>
<td>History – up to 10 values</td>
</tr>
</tbody>
</table>
### ASSIGNMENT OF MASTER PATIENT ID TO MEDICAID/MEDICARE DATA

**Eligibility**

Once we create the Master Patient Id we implement a hierarchical multiple-match attempts to assign the Master Patient ID to the **Eligibility** data. Matching attempts are listed in the hierarchy from highest to lowest (this is the “weight of accuracy” order.)

<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Master Patient Index Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Carrier Specific Unique Member ID</td>
<td>Carrier Specific Unique Member ID</td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>Member SSN</td>
<td>Member SSN</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member First Name</td>
<td>Member First Name</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member Last Name</td>
<td>Member Last Name</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member Date of Birth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member City</td>
<td>Member City</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member Address</td>
<td>Member Address</td>
<td></td>
</tr>
</tbody>
</table>
### Master Patient Index

#### Summary of Methodology

<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Master Patient Index Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fourth</td>
<td>Member First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Last Name Short</td>
<td>Member Last Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Date of Birth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member City Short</td>
<td>Member City Short</td>
<td>First 6 char</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Address Short</td>
<td>Member Address Short</td>
<td>First 6 char</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Last Name Short</td>
<td>Member Last Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Date of Birth Short</td>
<td>Member Date of Birth Short</td>
<td>Month &amp; Year only</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member City Short</td>
<td>Member City Short</td>
<td>First 6 char</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Address Short</td>
<td>Member Address Short</td>
<td>First 6 char</td>
</tr>
<tr>
<td>Sixth</td>
<td>Member First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Sixth</td>
<td>Member Last Name Short</td>
<td>Member Last Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Sixth</td>
<td>Member Date of Birth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Sixth</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Sixth</td>
<td>Member SSN</td>
<td>Member SSN</td>
<td>The Member SSN has to be missing on either the eligibility data or the Master Patient Index table or on both tables in order to assign the Master Patient ID from this attempt.</td>
</tr>
</tbody>
</table>

Seventh  | Member First Name Abbr | Member First Name Abbr     | Min of 2 char – Max of 5 char Set the length from the smallest number of characters found from First Name using the combination of: First Name Abbr. (2 char), Last Name Short, DOB Short, and Gender (not to be less than 2 or more than 5 characters). |
| Seventh  | Member Last Name Short | Member Last Name Short     | First 5 char                               |
| Seventh  | Member Date of Birth  | Member Date of Birth       |                                            |
## Medical/Drug

Below is the list of multiple matching attempts used to assign the Master Patient ID to the Medical/Drug data. The matching attempts are listed hierarchy order from highest to lowest (the “weight of accuracy” order). The Medical/Drug attempts are different from Eligibility because Member Address is not available on Medical/Drug claims.

<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Master Patient Index Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Carrier Specific Unique Member ID</td>
<td>Carrier Specific Unique Member ID</td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>Member SSN</td>
<td>Member SSN</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member First Name</td>
<td>Member First Name</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member Last Name</td>
<td>Member Last Name</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member Date of Birth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member City</td>
<td>Member City</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Last Name Short</td>
<td>Member Last Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Attempt</td>
<td>Source Field</td>
<td>Master Patient Index Field</td>
<td>Notes</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------</td>
<td>----------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Date of Birth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member City Short</td>
<td>Member City Short</td>
<td>First 6 char</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member First Name</td>
<td>Member First Name</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Fifth</td>
<td>Last Name Short</td>
<td>Member Last Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Fifth</td>
<td>Date of Birth Short</td>
<td>Member Date of Birth Short</td>
<td>Month &amp; Year only</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member City Short</td>
<td>Member City Short</td>
<td>First 6 char</td>
</tr>
<tr>
<td>Sixth</td>
<td>First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Sixth</td>
<td>Last Name Short</td>
<td>Member Last Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Sixth</td>
<td>Date of Birth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Sixth</td>
<td>Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Sixth</td>
<td>SSN</td>
<td>Member SSN</td>
<td>The Member SSN has to be missing on either the claims data or the Master Patient Index table or on both tables in order to assign the Master Patient ID from this attempt.</td>
</tr>
<tr>
<td>Seventh</td>
<td>First Name Abbr</td>
<td>Member First Name Abbr</td>
<td>Min of 2 char – Max of 5 char Set the length from the smallest number of characters found from First Name using the combination of: First Name Abbr. (2 char), Last Name Short, DOB Short, and Gender (not to be less than 2 or more than 5 characters).</td>
</tr>
<tr>
<td>Seventh</td>
<td>Last Name Short</td>
<td>Member Last Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Seventh</td>
<td>Date of Birth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Seventh</td>
<td>Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Seventh</td>
<td>SSN</td>
<td>Member SSN</td>
<td>The Member SSN has to be missing on either the claims data or the Master Patient Index table or on both tables in order to assign the Master Patient ID from this attempt.</td>
</tr>
</tbody>
</table>
IDENTIFYING NEW MEMBERS AND ADDING THEM TO THE MASTER PATIENT INDEX FROM MEDICAID/MEDICARE DATA

Eligibility

Once all attempts to assign a Master Patient ID to a member from eligibility have been exhausted, that member is identified as a new patient to add to the Master Patient Index. For all of the rows of data identified as new members to add to the Master Patient Index, some of the rows could be for the same member. Those multiple rows for the same member could contain different values (change of Last Name, change of Address, etc…). Here is the process used to identify the same member from multiple rows of data with potential changes of data within those rows.

<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Carrier Specific Unique Member ID</td>
<td>All members with the same Carrier Specific Unique Member ID are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Second</td>
<td>Member SSN</td>
<td>First, any records with a missing Member SSN will be assigned a Member SSN from another record where Carrier Specific Unique Member ID, First Name Abbreviated, Last Name Short, Date of Birth, and Gender are the same. All members with the same Member SSN are treated as the same member and assigned the same Master Patient ID</td>
</tr>
<tr>
<td>Third</td>
<td>Member First Name</td>
<td>First, all records will be assigned the same First Name (to avoid spelling errors during rollup) where Carrier Specific Unique Member ID, Member SSN, First Name Abbreviated, Date of Birth Short, and Gender are the same.</td>
</tr>
<tr>
<td>Third</td>
<td>Member Last Name</td>
<td>All members with the same Member First Name, Member Last Name, Member Date of Birth, Member Gender, Member City, and Member Address are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Third</td>
<td>Member Date of Birth</td>
<td>All members with the same Member First Name, Member Last Name, Member Date of Birth, Member Gender, Member City, and Member Address are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Third</td>
<td>Member Gender</td>
<td>All members with the same Member First Name, Member Last Name, Member Date of Birth, Member Gender, Member City, and Member Address are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Third</td>
<td>Member City</td>
<td>All members with the same Member First Name, Member Last Name, Member Date of Birth, Member Gender, Member City, and Member Address are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member First Name</td>
<td>All members with the same Member First Name, Member Last Name, Member Date of Birth, Member Gender, Member City, and Member Address are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
</tbody>
</table>
### Summary of Methodology

<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fourth</td>
<td>Member Last Name</td>
<td>Name, Member Date of Birth, and Member Gender are grouped together. The unique count of Member SSN for this combination of fields is determined. If the unique count for Member SSN for the combination of these fields is &lt;=1 (if there are multiple rows of data but there is only one unique Member SSN provided, then all rows have the exact same SSN or some of the rows have a missing SSN.) These rows are treated as the same member and assigned the same Master Patient ID. If the unique count of Member SSNs &gt;= 2, these members have the same name, gender, and date of birth as one another but are different members because they have different SSN values and should not be rolled up together. These rows will <strong>not</strong> be treated as one member and will not be assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member SSN</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Carrier Specific Unique Member ID</td>
<td>With the multiple rollup attempts listed above, there is a possibility that records with the same Carrier Specific Unique Member ID could be rolled up to two different Master Patient IDs (this would only occur if there were multiple Member SSN values associated to the same Carrier Specific Unique Member ID). This attempt is run in order to keep all records with the same Carrier Specific Unique Member ID together. All members with the same Carrier Specific Unique Member ID are grouped together and the Master Patient ID value that occurs most often (mode) is assigned to all records with the same Carrier Specific Unique Member ID.</td>
</tr>
</tbody>
</table>

### Medical/Drug

Once all attempts to assign a Master Patient ID for a member from **medical/drug** have been exhausted, that member is identified as a new person and added to the Master Patient Index. For all rows of data identified as new patients to add to the Master Patient Index, some of the rows may be for the same member. Those multiple rows for the same member could contain different values (change of Last Name, change of Address, etc…). Here is the process used to identify the same member from multiple rows of data with potential changes of data within those rows. The Medical/Drug attempts are different from Eligibility because Member Address is not available on Medical/Drug claims.
<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Carrier Specific Unique Member ID</td>
<td>All members with the same Carrier Specific Unique Member ID are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Second</td>
<td>Member SSN</td>
<td>First, any records with a missing Member SSN will be assigned a Member SSN from another record where Carrier Specific Unique Member ID, First Name Abbreviated, Last Name Short, Date of Birth, and Gender are the same. All members with the same Member SSN are treated as the same member and assigned the same Master Patient ID</td>
</tr>
<tr>
<td>Third</td>
<td>Member First Name</td>
<td>First, all records will be assigned the same First Name (to avoid spelling errors during rollup) where Carrier Specific Unique Member ID, Member SSN, First Name Abbreviated, Date of Birth Short, and Gender are the same.</td>
</tr>
<tr>
<td>Third</td>
<td>Member Last Name</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member Date of Birth</td>
<td>All members with the same Member First Name, Member Last Name, Member Date of Birth, Member Gender, and Member City are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Third</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member City</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member First Name</td>
<td>All members with the same Member First Name, Member Last Name, Member Date of Birth, and Member Gender are grouped together. The unique count of Member SSN for this combination of fields is determined. If the unique count for Member SSN for the combination of these fields is ( &lt;= 1 ) (if there are multiple rows of data but there is only one unique Member SSN provided, then all rows have the exact same SSN or some of the rows have a missing SSN.) These rows are treated as the same member and assigned the same Master Patient ID. If the unique count of Member SSNs ( &gt;= 2 ), these members have the same name, gender, and date of birth as one another but are different members because they have different SSN values and should not be rolled up together. These rows will <strong>not</strong> be treated as one member and will not be assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Last Name</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member SSN</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Carrier Specific Unique Member ID</td>
<td>With the multiple rollup attempts listed above, there is a possibility that records with the same Carrier Specific Unique Member ID could be rolled up to two different Master Patient IDs (this would only occur if there were multiple Member SSN values</td>
</tr>
<tr>
<td>Attempt</td>
<td>Source Field</td>
<td>Notes</td>
</tr>
<tr>
<td>---------</td>
<td>--------------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>associated to the same Carrier Specific Unique Member ID). This attempt is run in order to keep all records with the same Carrier Specific Unique Member ID together. All members with the same Carrier Specific Unique Member ID are grouped together and the Master Patient ID value that occurs most often (mode) is assigned to all records with the same Carrier Specific Unique Member ID.</td>
</tr>
</tbody>
</table>
ASSIGNMENT OF MASTER PATIENT ID TO BCBSMI DATA

Eligibility

Once we create the Master Patient Id we implement a hierarchical multiple-match attempts to assign the Master Patient ID to the Eligibility data. Matching attempts are listed in the hierarchy from highest to lowest (this is the “weight of accuracy” order.)

<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Master Patient Index Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Carrier Specific Unique Member ID</td>
<td>Carrier Specific Unique Member ID</td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>Member SSN - Commercial</td>
<td>Member SSN - Commercial</td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>Member First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Second</td>
<td>Member Date of Birth Short</td>
<td>Member Date of Birth Short</td>
<td>Month &amp; Year only</td>
</tr>
<tr>
<td>Second</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Subscriber SSN</td>
<td>Subscriber SSN</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member First Name</td>
<td>Member First Name</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Third</td>
<td>Member Date of Birth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member First Name</td>
<td>Member First Name</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Last Name</td>
<td>Member Last Name</td>
<td>If Member Last Name is missing, then Subscriber Last Name is used.</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Date of Birth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member City</td>
<td>Member City</td>
<td></td>
</tr>
<tr>
<td>Attempt</td>
<td>Source Field</td>
<td>Master Patient Index Field</td>
<td>Notes</td>
</tr>
<tr>
<td>---------</td>
<td>--------------</td>
<td>---------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Address</td>
<td>Member Address</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Member First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
</tbody>
</table>
| Fifth   | Member Last Name Short | Member Last Name Short | First 5 char  
  If the Member Last Name is missing, then the Subscriber Last Name will be used. |
| Fifth   | Member Date of Birth | Member Date of Birth |       |
| Fifth   | Member Gender | Member Gender |       |
| Fifth   | Member City Short | Member City Short | First 6 char |
| Fifth   | Member Address Short | Member Address Short | First 6 char |
| Sixth   | Member First Name Short | Member First Name Short | First 5 char |
| Sixth   | Member Last Name Short | Member Last Name Short | First 5 char  
  If the Member Last Name is missing, then the Subscriber Last Name will be used. |
| Sixth   | Member Date of Birth Short | Member Date of Birth Short | Month & Year only |
| Sixth   | Member City Short | Member City Short | First 6 char |
| Sixth   | Member Address Short | Member Address Short | First 6 char |
| Seventh | Member First Name Short | Member First Name Short | First 5 char |
| Seventh | Member Last Name Short | Member Last Name Short | First 5 char  
  If the Member Last Name is missing, then the Subscriber Last Name will be used. |
| Seventh | Member Date of Birth | Member Date of Birth |       |
| Seventh | Member Gender | Member Gender |       |
| Seventh | Member SSN - Commercial | Member SSN - Commercial | The Member SSN - Commercial has to be missing on either the eligibility data or the Master Patient Index table or on both tables in order to assign the Master Patient ID from this |
Medical/Drug

Below is the list of multiple matching attempts used to assign the Master Patient ID to the Medical/Drug data. The matching attempts are listed hierarchy order from highest to lowest (the “weight of accuracy” order). The Medical/Drug attempts are different from Eligibility because Member Address is not available on Medical/Drug claims.

<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Master Patient Index Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Carrier Specific Unique Member ID</td>
<td>Carrier Specific Unique Member ID</td>
<td></td>
</tr>
<tr>
<td>Attempt</td>
<td>Source Field</td>
<td>Master Patient Index Field</td>
<td>Notes</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------</td>
<td>----------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Second</td>
<td>Member SSN - Commercial</td>
<td>Member SSN - Commercial</td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>Member First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Second</td>
<td>Member Date of Birth Short</td>
<td>Member Date of Birth Short</td>
<td>Month &amp; Year only</td>
</tr>
<tr>
<td>Second</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Subscriber SSN</td>
<td>Subscriber SSN</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Third</td>
<td>Member Date of Birth Short</td>
<td>Member Date of Birth Short</td>
<td>Month &amp; Year only</td>
</tr>
<tr>
<td>Third</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member First Name</td>
<td>Member First Name</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Last Name</td>
<td>Member Last Name</td>
<td>If the Member Last Name is missing, then the Subscriber Last Name will be used.</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Date of Birth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member City</td>
<td>Member City</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Member First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Last Name Short</td>
<td>Member Last Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Date of Birth</td>
<td>Member Date of Birth</td>
<td>If the Member Last Name is missing, then the Subscriber Last Name will be used.</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Member City Short</td>
<td>Member City Short</td>
<td>First 6 char</td>
</tr>
<tr>
<td>Attempt</td>
<td>Source Field</td>
<td>Master Patient Index Field</td>
<td>Notes</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------</td>
<td>----------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sixth</td>
<td>Member First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Sixth</td>
<td>Member Last Name Short</td>
<td>Member Last Name Short</td>
<td>First 5 char&lt;br&gt; If the Member Last Name is missing, then the Subscriber Last Name will be used.</td>
</tr>
<tr>
<td>Sixth</td>
<td>Member Date of Birth Short</td>
<td>Member Date of Birth Short</td>
<td>Month &amp; Year only</td>
</tr>
<tr>
<td>Sixth</td>
<td>Member City Short</td>
<td>Member City Short</td>
<td>First 6 char</td>
</tr>
<tr>
<td>Seventh</td>
<td>Member First Name Short</td>
<td>Member First Name Short</td>
<td>First 5 char</td>
</tr>
<tr>
<td>Seventh</td>
<td>Member Last Name Short</td>
<td>Member Last Name Short</td>
<td>First 5 char&lt;br&gt; If the Member Last Name is missing, then the Subscriber Last Name will be used.</td>
</tr>
<tr>
<td>Seventh</td>
<td>Member Date of Birth Short</td>
<td>Member Date of Birth Short</td>
<td></td>
</tr>
<tr>
<td>Seventh</td>
<td>Member Gender</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Seventh</td>
<td>Member SSN - Commercial</td>
<td>Member SSN - Commercial</td>
<td>The Member SSN - Commercial has to be missing on either the claims data or the Master Patient Index table or on both tables in order to assign the Master Patient ID from this attempt.</td>
</tr>
<tr>
<td>Eighth</td>
<td>Member First Name Abbr</td>
<td>Member First Name Abbr</td>
<td>Min of 2 char – Max of 5 char&lt;br&gt; Set the length from the smallest number of characters found from First Name using the combination of: First Name Abbr. (2 char), Last Name Short, DOB Short, and Gender (not to be less than 2 or more than 5 characters).</td>
</tr>
<tr>
<td>Eighth</td>
<td>Member Last Name Short</td>
<td>Member Last Name Short</td>
<td>First 5 char&lt;br&gt; If the Member Last Name is missing, then the Subscriber Last Name will be used.</td>
</tr>
</tbody>
</table>
IDENTIFYING NEW MEMBERS AND ADDING THEM TO THE MASTER PATIENT INDEX FROM BCBSMI DATA

Eligibility

Once all attempts to assign a Master Patient ID to a member from eligibility have been exhausted, that member is identified as a new patient to add to the Master Patient Index. For all of the rows of data identified as new members to add to the Master Patient Index, some of the rows could be for the same member. Those multiple rows for the same member could contain different values (change of Last Name, change of Address, etc…). Here is the process used to identify the same member from multiple rows of data with potential changes of data within those rows.

<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Carrier Specific Unique Member ID</td>
<td>All members with the same Carrier Specific Unique Member ID are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Second</td>
<td>Member SSN - Commercial</td>
<td>First, any records with a missing Member SSN - Commercial will be assigned a Member SSN - Commercial from another record where First Name Abbreviated, Last Name Short, Date of Birth, and Gender are the same.</td>
</tr>
<tr>
<td>Second</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>Member Gender</td>
<td></td>
</tr>
</tbody>
</table>
### Master Patient Index
#### Summary of Methodology

<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second</td>
<td>Member First Name</td>
<td>All members with the same Member SSN - Commercial, Member Date of Birth, Member Gender, and Member First Name are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Third</td>
<td>Subscriber SSN</td>
<td>All members with the same Subscriber SSN, Member Date of Birth, Member Gender, and Member First Name are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Third</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member First Name</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member First Name</td>
<td>First, all records will be assigned the same First Name (to avoid spelling errors during rollup) where Member SSN - Commercial, First Name Abbreviated, Date of Birth Short, and Gender are the same. Second, all records will be assigned the same First Name (to avoid spelling errors during rollup) where Subscriber SSN, First Name Abbreviated, Date of Birth Short, and Gender are the same.</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Last Name</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member City</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Address</td>
<td>All members with the same Member First Name, Member Last Name, Member Date of Birth, Member Gender, Member City, and Member Address are treated as the same member and assigned the same Master Patient ID. If the Member Last Name is missing, then the Subscriber Last Name will be used.</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member First Name</td>
<td>First, all records are assigned a same Member SSN - Commercial where Subscriber SSN, First Name Short, Date of Birth Short, and Gender are the same (stabilizing Member SSN in order to roll records together). Second, all records will be assigned the same Member SSN - Commercial where Subscriber SSN / First Name Short / Date of Birth Short / Gender is that same as the Member SSN - Commercial / First Name Short / Date of Birth Short / Gender of another record (to roll up any records were the Subscriber SSN</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Last Name</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Member SSN - Commercial</td>
<td></td>
</tr>
<tr>
<td>Attempt</td>
<td>Source Field</td>
<td>Notes</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>appears to be in the Member SSN - Commercial or the Subscriber SSN and Member SSN - Commercial appear to be inadvertently transposed). All members with the same Member First Name, Member Last Name, Member Date of Birth, and Member Gender are grouped together. The unique count of Member SSN - Commercial for this combination of fields is determined. If the unique count for Member SSN - Commercial for the combination of these fields is &lt;=1 (if there are multiple rows of data but there is only one unique Member SSN - Commercial provided, then all rows have the exact same SSN or some of the rows have a missing SSN.) These rows are treated as the same member and assigned the same Master Patient ID. If the unique count of Member SSN - Commercial &gt;= 2, these members have the same name, gender, and date of birth as one another but are different members because they have different SSN values and should not be rolled up together. These rows will not be treated as one member and will not be assigned the same Master Patient ID. If the Member Last Name is missing, then the Subscriber Last Name will be used.</td>
</tr>
<tr>
<td>Sixth</td>
<td>Carrier Specific Unique Member ID</td>
<td>With the multiple rollup attempts listed above, there is a possibility that records with the same Carrier Specific Unique Member ID could be rolled up with two different Master Patient IDs (this would only occur if there were multiple Member SSN - Commercial values associated to the same Carrier Specific Unique Member ID). This attempt is run in order to keep all records with the same Carrier Specific Unique Member ID together. All members with the same Carrier Specific Unique Member ID are grouped together and the Master Patient ID value that occurs most often (mode) is assigned to all records with the same Carrier Specific Unique Member ID.</td>
</tr>
</tbody>
</table>
Medical/Drug

Once all attempts to assign a Master Patient ID for a member from medical/drug have been exhausted, that member is identified as a new person and added to the Master Patient Index. For all rows of data identified as new patients to add to the Master Patient Index, some of the rows may be for the same member. Those multiple rows for the same member could contain different values (change of Last Name, change of Address, etc…). Here is the process we apply to identify the same member from multiple rows of data with potential changes to data within those rows. The Medical/Drug attempts are different from Eligibility because Member Address is not available on Medical/Drug claims.

<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Carrier Specific Unique Member ID</td>
<td>All members with the same Carrier Specific Unique Member ID are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Second</td>
<td>Member SSN - Commercial</td>
<td>First, any records with a missing Member SSN - Commercial will be assigned a Member SSN - Commercial from another record where First Name Abbreviated, Last Name Short, Date of Birth, and Gender are the same.</td>
</tr>
<tr>
<td>Second</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>Member Gender</td>
<td>All members with the same Member SSN - Commercial, Member Date of Birth, Member Gender, and Member First Name are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Second</td>
<td>Member First Name</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Subscriber SSN</td>
<td>All members with the same Subscriber SSN, Member Date of Birth, Member Gender, and Member First Name are treated as the same member and assigned the same Master Patient ID.</td>
</tr>
<tr>
<td>Third</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Member First Name</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member First Name</td>
<td>First, all records will be assigned the same First Name (to avoid spelling errors during rollup) where Member SSN - Commercial, First Name Abbreviated, Date of Birth Short, and Gender are the same.</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Last Name</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Attempt</td>
<td>Source Field</td>
<td>Notes</td>
</tr>
<tr>
<td>---------</td>
<td>--------------</td>
<td>-------</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member Gender</td>
<td>Second, all records will be assigned the same First Name (to avoid spelling errors during rollup) where Subscriber SSN, First Name Abbreviated, Date of Birth Short, and Gender are the same. All members with the same Member First Name, Member Last Name, Member Date of Birth, Member Gender, and Member City are treated as the same member and assigned the same Master Patient ID. If the Member Last Name is missing, then the Subscriber Last Name will be used.</td>
</tr>
<tr>
<td>Fourth</td>
<td>Member City</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Member First Name</td>
<td>First, all records will be assigned the same Member SSN - Commercial (to avoid not rolling records together because the some of the records contain an SSN that is invalid) where Subscriber SSN, First Name Short, Date of Birth Short, and Gender are the same. Second, all records will be assigned the same Member SSN - Commercial (to avoid not rolling records together because some of the records contain an SSN that is invalid) where Subscriber SSN / First Name Short / Date of Birth Short / Gender is that same as the Member SSN - Commercial / First Name Short / Date of Birth Short / Gender of another record (to roll up any records were the Subscriber SSN was entered into the Member SSN - Commercial or the Subscriber SSN and Member SSN - Commercial were flip flopped inadvertently). All members with the same Member First Name, Member Last Name, Member Date of Birth, and Member Gender are grouped together. The unique count of Member SSN - Commercial for this combination of fields is determined. If the unique count for Member SSN – Commercial for the combination of these fields is &lt;=1 (if there are multiple rows of data but there is only one unique Member SSN – Commercial provided, then all rows have the exact same SSN or some of the rows have a missing SSN.) These rows are treated as the same member and assigned the same Master Patient ID. If the unique count of Member SSN - Commercial &gt;= 2, these members have the same name, gender,</td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Last Name</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Member Gender</td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>Member SSN - Commercial</td>
<td></td>
</tr>
</tbody>
</table>
and date of birth as one another but are different members because they have different SSN values and should not be rolled up together. These rows will **not** be treated as one member and will not be assigned the same Master Patient ID.

If the Member Last Name is missing, then the Subscriber Last Name will be used.

<table>
<thead>
<tr>
<th>Attempt</th>
<th>Source Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sixth</td>
<td>Carrier Specific Unique Member ID</td>
<td>With the multiple rollup attempts listed above, there is a possibility that records with the same Carrier Specific Unique Member ID could be rolled up to two different Master Patient IDs (this would only occur if there were multiple Member SSN – Commercial values associated to the same Carrier Specific Unique Member ID). This attempt is run in order to keep all records with the same Carrier Specific Unique Member ID together. All members with the same Carrier Specific Unique Member ID are grouped together and the Master Patient ID value that occurs most often (mode) is assigned to all records with the same Carrier Specific Unique Member ID.</td>
</tr>
</tbody>
</table>