**User Guide for the MIMIC II V3.0 Database**

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**User Guide version1.1**

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## 1.0 Clinical overview of data in version 3.0 of MIMIC II database

The new version 3.0 (Dec. 2014) of MIMIC II contains around 48,000 patients, including over 15,000 newly added adult patients (neonates patients will be added at a later release). The total count of hospital admissions is now nearly 58,000 with over 60,000 ICU stays. Version 2.6 contains ICU clinical data from 2001 to 2008; version 3.0 extended the data set to October of 2012.

The comparison of patients/admissions/icustays between v2.6 and v3.0 is listed below.

**Table 1. Comparison of patient volume between MIMIC2V26 and MIMIC2V30**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table Name (Primary Key column)** | **Count (MIMIC2V26)** | **Count (MIMIC2V30)** | **Difference** | **New ID data in MIMIC2V30 starting point** |
| **D\_Patients (subject\_id)** | 32,536 | 48,018 | 15,482 | 33,000 |
| **Admssions (hadm\_id)** | 36,095 | 57,955 | 21,860 | 37,000 |
| **ICUStayEvents (icustay\_id)** | 40,426 | 60,618 | 20,192 | 48,000 |

## [2.0 Clinical database](http://mimic.physionet.org/UserGuide/node20.html)

### 2.1 Patients (D\_Patients table)

The source table for new patients added to D\_PATIENTS comes from the PATIENTS table in the MetaVision (for ICU Adult patients) database; the date range is 7/12/2007-9/25/2012.

The structure of the D\_Patients table in version 3.0 did not change much, but we did add a new column - the first 3 digits of zip codes. This information should provide new information for geographic based studies. Table 2 lists all columns in the D\_Patients table.

In addition to data from source databases and data sets, this table also incorporates DOD (Date of Death) information from social security up to Feb. 2013.

Another change to this table is that we shifted the ages of all patients over age 90 to an older age (over 200) for de-identification purposes. In the old version (2.6), only patients who are alive and over 90 were shifted. This change is to minimize confusion for users who are interested in age related studies.

**Table 2. Description of the columns in the D\_PATIENTS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data type*** | ***New Column*** | ***Remarks*** |
| SUBJECT\_ID | NUMBER(7) | N | Primary key |
| SEX | VARCHAR2(1) | N |  |
| DOB | DATE | N |  |
| DOD | DATE | N |  |
| HOSPITAL\_EXPIRE\_FLG | VARCHAR2(1) | N |  |
| ZIPCODE | VARCHAR2(5) | Y |  |

### 2.2 Care Giver (D\_Caregivers table)

The Caregiver IDs (CGID) are stored in table D\_Caregivers, which contains about 11,000 rows in version 2.6 and about 15,000 rows in version 3.0. However, we discovered that in version 2.6, one caregiver could be assigned with multiple CGIDs. In version 3.0, we added one new column called CG\_UNIQUEID, which is the unique ID for caregivers. For the multiple CGIDs for one Care Giver, we chose one ID as the active one and assigned status ‘A’ (Active) in the CGID\_STATUS column, all other CGIDs were assigned status ‘M’ (Merged), indicating a ‘merged’ status of the CGID. Only the CGID with CGID\_status=’A’ was used in other tables like MEDEVENTS, CHARTEVENTS etc.

Another change to this table in version 3.0 is that we added a new column - ‘DESCRIPTION’, which gives more detailed information about the Care Giver. For example, a ‘MD’ can be ‘Attending’ or ‘Resident/Fellow/PA/NP’.

**Table 3. Description of the columns in the D\_CAREGIVERS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data type*** | ***New Column*** | ***Remarks*** |
| CGID | NUMBER | N | Care giver ID (the old ones from v2.6 is not unique) |
| CG\_UNIQUEID | NUMBER | Y | Unique ID of a care giver |
| LABEL | VARCHAR2(6) | N | Title of Care Giver |
| DESCRIPTION | NVARCHAR2(30) | Y | More detailed description of care giver |
| CG\_STATUS | VARCHAR2(1) | Y | ‘A’ indicates an active CGID, ‘M’ indicates a merged CGID. |

### 2.3 Care Unit (D\_Careunits table)

This table did not change much between version 2.6 and version 3.0, the only difference is that CUID 54 used to be ‘CSRU’, it’s now called ‘CVICU’, so the label of this care unit in version 3.0 includes both names.

### 2.4 ADT data (Admissions, Censusevents, ICUStayevents and ICUStay\_days tables)

#### Admissions

The source data for the ADMISSIONS table comes from the BIDMC admission/discharge/transfer data set, which included hospital admissions and discharges for all patients from 01/02/2001 to 10/31/2012.

The ADMISSIONS table in MIMIC2V26 has a date range of 4/3/2001 to 9/16/2008. As mentioned earlier, the date range for new patient admissions from MetaVision database is 7/12/2007 - 9/25/2012. Therefore, some ICU patients in the MetaVision adult patients table have been included in the MIMIC2V26 database.

The data mapping and merging process between MIMIC II v2.6 and the MetaVision Database started by filtering out new hospital admissions first; among the new hospital admissions, there are old patients and new patients. For old patients, we needed to map to the existing SUBJECT\_ID; for new patients, we generated new SUBJECT\_IDs.

Some changes to the ADMISSIONS table in v3.0 are as follows:

1. For new admissions, the ADMIT\_DT and DISCH\_DT in the v3.0 ADMISSIONS table contain date and time information; data coming from MIMIC II v2.6 only contains date information.
2. Three new columns were added to this table – ‘ADM\_DIAGNOSIS’, ‘FIRST\_SERVICE\_UNIT’, ‘LAST\_SERVICE\_UNIT’

**Table 4. Description of the columns in the ADMISSIONS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data type*** | ***New Column*** | ***Remarks*** |
| HADM\_ID | NUMBER | N | Primary Key |
| SUBJECT\_ID | NUMBER | N | Foreign Key – referring to D\_PATIENTS table |
| ADMIT\_DT | TIMESTAMP(6) WITH TIME ZONE | N |  |
| DISCH\_DT | TIMESTAMP(6) WITH TIME ZONE | N |  |
| ADM\_DIAGNOSIS | CLOB | Y |  |
| FIRST\_SERVICE | VARCHAR2(4) | Y |  |
| LAST\_SERVICE | VARCHAR2(4) | Y |  |

#### Censusevents

The Censusevents table tracks the changes of beds or care units and transfer of patients. For MIMIC2V30, this table is generated based on the PATIENTTRACKING table in the MetaVision database.

#### ICUStayevents

The ICUSTAYEVENTS table is generated from the CENSUSEVENTS table. An ICUSTAY\_ID is generated to mark any new ICUSTAY events for patients. In many cases, patients can be in and out of the ICU care units multiple times during one hospital admission. For these cases, we set the following rule regarding ICUSTAY\_IDs:

***For patients transferred out of ICU units but re-admitted to the same ICU care unit within 24 hours, it’s considered as one ICUSTAY event with the same ICUSTAY\_ID. However, if the patient was re-admitted back to the same ICU care unit after 24 hours, it’s considered as a new ICUSTAY event, and is assigned a new ICUSTAY\_ID.***

#### ICUStay\_days tables

The ICUSTAY\_DAYS table is generated from the ICUSTAYEVENTS table; it basically listed the ICUSTAYEVENTS by days and marked the first and last day of ICUSTAY.

### 2.5 [Patient data](http://mimic.physionet.org/UserGuide/node25.html)

#### [2.5.1 Demographics](http://mimic.physionet.org/UserGuide/node26.html) (Demographic\_Details table)

This table contains patient demographic information such as ethnicity, religion, marital status as well as admission source, admission type and insurance information. For version 3.0, this table contains ITEMID as well as descriptions, making word-based searches much easier.

#### 2.5.2 Items (D\_Items table)

In version2.6, the ITEMID and LABELs (descriptions) for different events tables (such as chartevents, medevents, ioevents, labevents) are stored in separate tables; the ranges of the ITEMIDs in these tables are listed in Table 2.

**Table 5. The ITEMS tables in version 2.6**

|  |  |
| --- | --- |
| ***Table name*** | ***Range of ITEMID*** |
| D\_Chartitems | 1 - 20009 |
| D\_Meditems | 1 – 405 |
| D\_IOitems | -1 - 6807 |
| D\_Labitems | 50001 - 50735 |
| D\_Codeditems | 60001 - 101885 |
| D\_Demographicitems | 200001 - 200088 |

In version 3.0, we combined all D\_...ITEMS tables from v2.6 and the MetaVision PARAMETERS (ITEMS) to form the new D\_ITEMS table.

When we attempted to merge the Metavision data with MIMIC2V26 data, one of the big challenges was to properly map and merge the D\_...ITEMS table. Since Metavision data does not separate ITEMIDs into the same categories (Med, IO, Coded, Lab, Chart etc.) and their names can be totally different, it’s nearly impossible to map them directly to the six different D\_...ITEMS tables and the ITEMIDs in MIMIC2V26. To solve the problem, we took the approach of combining all D\_...ITEMS tables in v2.6 and the PARAMETERS Table in MetaVision, thus forming the new D\_ITEMS table.

***Please note that, in version 2.6 and earlier versions of MIMIC2 database, one specific ITEM can have more than one ITEMID. This is still the case in version 3.0; users will have to add the MetaVision ITEMID to the list of ITEMIDs by running a name (or word)-based search in the D\_ITEMS table.***

Since we needed to merge all the D\_...ITEMS tables into one table in version 3.0, we had to make sure different types of ITEMIDs (from different D\_...ITEMS tables in version 2.6) are within their own numeric range (no overlapping). Therefore, two types of ITEMIDs (MED and IO) from version 2.6 had to be shifted to a higher range of integers to avoid overlap with ITEMIDs from D\_Chartitems (see Table 2).

The ‘ORIGIN’ column added to the new D\_ITEMS table indicates the source table of the data (ITEMIDs). The following table lists the ORIGINs and ITEMID ranges in version 3.0.

**Table 6. The D\_ITEMS table in version 3.0 and ranges of ITEMIDs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***v3.0 Table name*** | ***ORIGIN*** | ***Range of ITEMID*** | ***Difference*** | ***Source table in v2.6 /database*** |
| D\_ITEMS | CHART | 1 - 20009 | None | D\_Chartitems (v2.6) |
| MED | 30001 – 30405 | + 30000 | D\_Meditems (v.2.6) |
| IO | 40000 – 46808 | + 40001 | D\_IOitems (v2.6) |
| LAB | 50800 – 51554 | Re-generated ITEMIDs | D\_ Labitems (v2.6) |
| CODED | 60001 - 101885 | None | D\_Codeditems (v2.6) |
| DEMOGRAPHIC | 200001 - 200088 | none | D\_Demographicitems(v2.6) |
| METAVISION | 220003 - 228647 | +220000 | MetaVision DB |

Since the D\_ITEMS table in v3.0 combined all six of the D\_...ITEMS tables in v2.6 and we kept all related columns, the D\_ITEMS table does have more columns than any of its source tables. The following table lists the column names, data types and source tables of all columns in MIMIC2V30.D\_ITEMS table.

**Table 7. Description of the columns in the D\_ITEMS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data type*** | ***New column*** | ***Source tables/Database*** |
| ITEMID | NUMBER(7) | N | D\_Chartitems, D\_Meditems, D\_IOitems, D\_Codeditems, D\_Labitems, D\_Demographicitems  and METAVISION Database |
| LABEL | VARCHAR2(100) | N | D\_Chartitems, D\_Meditems, D\_IOitems, D\_Codeditems, D\_Demographicitems and METAVISION Database |
| ABBREVIATION | VARCHAR2(50) | Y | METAVISION Database |
| ORIGIN | VARCHAR2(12) | Y |  |
| CODE | VARCHAR2(10) | N | D\_Codeditems |
| CATEGORY | VARCHAR2(50) | N | D\_Chartitems, D\_IOitems, D\_Codeditems, D\_Labitems, D\_Demographicitems and METAVISION |
| UNITID | NUMBER(5) | Y | METAVISION Database |
| UNITNAME | VARCHAR2(50) | Y | METAVISION Database |
| TYPE | VARCHAR2(40) | N | D\_Codeditems and METAVISION |
| DESCRIPTION | VARCHAR2(150) | N | D\_Chartitems, D\_Codeditems |
| LOWNORMALVALUE | FLOAT(126) | Y | METAVISION Database |
| HIGHNORMALVALUE | FLOAT(126) | Y | METAVISION Database |
| ALLERGYACTION | NUMBER(3) | Y | METAVISION Database |
| LOINC\_CODE | Varchar2(7) | N | Lab data from BIDMC |
| LOINC\_DESCRIPTION | Varchar2(100) | N | Lab data from BIDMC |
| OLD\_LABITEMID | NUMBER(7) | Y | D\_Labitems |
| OLD\_TEST\_NAME | VARCHAR2(50) | Y | D\_Labitems |
| OLD\_LOINC\_CODE | VARCHAR2(7) | Y | D\_Labitems |

#### 2.5.3 Diagnosis (ICD9, DRGEVENTS)

The ICD9 table is an important table for users to check patient diagnoses. The structure of this table did not change in the new version.

But for the first time, the admission diagnosis (adm\_diagnosis) information is now available in the ADMISSIONS table in v3.0. (This diagnosis is assigned by the admitting office at the moment of admission based on input from the admitting physician. It may be modified after the patient is treated in the hospital.)

Another table that contains diagnosis related data is the DRGEVENTS table; we included descriptive columns for the ITEMID in the new version. The following table lists all columns of DRGEVENTS in v3.0.

**Table 8. Description of the columns in the DRGEVENTS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data type*** | ***New Column*** | ***Remarks*** |
| SUBJECT\_ID | NUMBER(7) | N | Foreign Key – referring to D\_PATIENTS table |
| ITEMID | NUMBER(7) | N | Foreign Key – referring to ADMISSIONS table |
| TYPE | VARCHAR2(12) | N |  |
| CODE | VARCHAR2(10) | N |  |
| DESCRIPTION | VARCHAR2(100) | Y |  |
| COST\_WEIGHT | NUMBER | Y |  |

#### 2.5.4 Medications (MEDEVENTS, ORDERENTRY, POE\_MED\_ORDER)

In version 3.0, a new table – ORDERENTRY, which contains all medical treatment order information, is added to medication related tables. MEDEVENTS, ADDTIVES and IOEVENTS now all contain ORDERID, which is a foreign key referring to the ORDERENTRY table. Since the new source database, MetaVision, has totally different schema design and table structures, we had to add some new columns to the medication related tables while trying to preserve all the data and columns from the old version.

One big difference you may notice is that all new medication records have ‘START’ and ‘END’ times; users can easily calculate the total amount of medication using these two columns. Because of this, the A\_MEDDURATIONS table is no longer needed. But users can still use that table in v2.6 for any checking and calculations for the old data.

The following table lists the columns of MEDEVENTS; new columns are noted.

**Table 9. Description of the columns in the MEDEVENTS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data Type*** | ***New Column*** | ***Remarks*** |
| SUBJECT\_ID | NUMBER(7) | N | Foreign key, referring to D\_PATIENTS |
| ICUSTAY\_ID | NUMBER(7) | N | Foreign key, referring to ICUSTAYEVENTS |
| ORDERID | NUMBER(7) | Y | Foreign key, referring to ORDERENTRY |
| ITEMID | NUMBER(7) | N | Foreign key, referring to D\_ITEMS |
| LABEL | VARCHAR2(100) | Y | Included for easy word-based searches |
| SOLITEMID | NUMBER(7) | N |  |
| SOLITEMLABEL | VARCHAR2(100) | Y | Included for easy word-based searches |
| CHARTTIME | TIMESTAMP(6) WITH TIME ZONE | N | Used for old data, null for new data |
| ELEMID | NUMBER(7) | N |  |
| REALTIME | TIMESTAMP(6) WITH TIME ZONE | N | Used for old data, null for new data |
| STARTTIME | TIMESTAMP(6) WITH TIME ZONE | Y | Used for new data, null for old data |
| ENDTIME | TIMESTAMP(6) WITH TIME ZONE | Y | Used for new data, null for old data |
| VALUE | NUMBER | N | Called ‘DOSE’ in v2.6 |
| UOM | VARCHAR2(100) | Y | Called ‘DOSEUOM’ in v2.6 |
| SOLITEMVALUE | NUMBER | N | Called ‘SOLVOLUME’ in v2.6 |
| SOLITEMUOM | VARCHAR2(100) | N | Called ‘SOLUNITS’ in v2.6 |
| CGID | NUMBER | N |  |
| CUID | NUMBER | N |  |
| STOPPED | VARCHAR2(20) | N |  |

Here is a list of all columns in the newly added table – ORDERENTRY.

**Table 10. Description of the columns in the ORDERENTRY table**

|  |  |  |
| --- | --- | --- |
| ***Column name*** | ***Data Type*** | ***Remarks*** |
| ORDERID | NUMBER(10) | Primary key |
| LINKORDERID | NUMBER(10) |  |
| SUBJECT\_ID | NUMBER | Foreign key, referring to D\_PATIENTS |
| ICUSTAY\_ID | NUMBER(7) | Foreign key, referring to ICUSTAYEVENTS |
| CGID | NUMBER | Foreign key, referring to D\_CAREGIVERS |
| ISSUEDATE | TIMESTAMP(6) WITH TIME ZONE |  |
| ORDERCATEGORY | NVARCHAR2(84) |  |
| PATIENTWEIGHT | FLOAT(126) |  |
| ISOPENBAG | NUMBER(1) |  |
| CANCELREASON | NUMBER(5) |  |
| COMMENTS | NVARCHAR2(1000) |  |
| LOCATIONNAME | NVARCHAR2(153) |  |
| ROUTE | NVARCHAR2(50) |  |
| DURATION | NUMBER |  |
| DURATIONUOM | NVARCHAR2(70) |  |
| TOTALVOLUME | FLOAT(126) |  |
| TOTALVOLUMEUOM | NVARCHAR2(70) |  |
| CONTINUEINNEXTDEPT | NUMBER |  |

Another table that’s related to medication is POE\_MED\_ORDER, the source data for this table comes from BIDMC data sets, not from the MetaVision database. This table documents medications that were *ordered* not administered, and includes orders well beyond the ICU stay.

In version 2.6, this table was divided into two tables, POE\_MED and POE\_ORDER. However, in the new data set we have already combined the data from these two tables, so we just created one table.

Table 11. **Description of the columns in the POE\_MED\_ORDER table**

|  |  |  |
| --- | --- | --- |
| ***Column name*** | ***Data Type*** | ***Remarks*** |
| SUBJECT\_ID | NUMBER(7) | Foreign key, referring to D\_PATIENTS |
| HADM\_ID | NUMBER(7) | Foreign key, referring to ADMISSIONS |
| ICUSTAY\_ID | NUMBER(7) | Foreign key, referring to ICUSTAYEVENTS |
| START\_DT | TIMESTAMP(6) WITH TIME ZONE |  |
| STOP\_DT | TIMESTAMP(6) WITH TIME ZONE |  |
| DRUG\_TYPE | VARCHAR2(80) |  |
| DRUG | VARCHAR2(80) |  |
| DRUG\_NAME\_POE | VARCHAR2(80) |  |
| DRUG\_NAME\_GENERIC | VARCHAR2(50) |  |
| FORMULARY\_DRUG\_CD | VARCHAR2(90) |  |
| GSN | VARCHAR2(180) |  |
| NDC | VARCHAR2(90) |  |
| PROD\_STRENGTH | VARCHAR2(90) |  |
| DOSE\_VAL\_RX | VARCHAR2(90) |  |
| DOSE\_UNIT\_RX | VARCHAR2(90) |  |
| FORM\_VAL\_DISP | VARCHAR2(90) |  |
| FORM\_UNIT\_DISP | VARCHAR2(90) |  |
| ROUTE | VARCHAR2(60) |  |

#### 2.5.5 Charts (CHARTEVENTS table)

The CHARTEVENTS table is the largest table in the database and contains all bedside patient records. In version 2.6, the CHARTEVENTS table has about 196 million rows of data; in version 3.0, the row count of the CHARTEVENTS table is 234 million.

One change we made to the CHARTEVENTS table in v3.0 is that we renamed ‘CHARTTIME’ column to ‘TIME’ and ‘REALTIME’ column to ‘VALIDATIONTIME’. The new names were introduced to avoid confusion often associated with the ‘CHARTTIME’ and ‘REALTIME’ columns in v2.6. The new names in v3.0 should be easier to understand: ‘TIME’ refers to the actual time the measurements were taken, and ‘VALIDATIONTIME’ refers to the time when the values of the measurements were recorded.

For the new data coming from MetaVision, the event time is recorded as ‘TIME’ and followed by the ‘VALIDATION’ time; we adapted the naming conventions of the new data source. Another new column from the MetaVision database is called ‘COMMENTS’, which contains units of measure and the normal range of a measurement. This column can be very useful to users.

Please note that there is no ‘VALUE2’ for the new data coming from MetaVision. One good example is the recording of blood pressure:

In MIMIC2V26, the itemid=51 (LABEL= ‘Arterial BP’) included ‘VALUE1’ and ‘VALUE2’ for systolic and diastolic blood pressures. For new patients in MIMIC2V30, there are two ITEMIDs for blood pressure measurements: for systolic blood pressure, the ITEMID=220179, and for diastolic blood pressure, ITEMID=220180.

**Table 12. Description of the columns in the CHARTEVENTS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data Type*** | ***New Column*** | ***Remarks*** |
| SUBJECT\_ID | NUMBER(7) | N | Foreign key, referring to D\_PATIENTS |
| HADM\_ID | NUMBER(7) | Y | Foreign key, referring to ADMISSIONS |
| ICUSTAY\_ID | NUMBER(7) | N | Foreign key, referring to ICUSTAYEVENTS |
| ITEMID | NUMBER(7) | N | Foreign key, referring to D\_ITEMS |
| LABEL | VARCHAR2(100) | Y | Included for easy word-based searches |
| TIME | TIMESTAMP(6) WITH TIME ZONE | N | Called ‘CHARTTIME’ in v2.6 |
| ELEMID | NUMBER(7) | N |  |
| VALIDATIONTIME | TIMESTAMP(6) WITH TIME ZONE | N | Called ‘REALTIME’ in v2.6 |
| CGID | NUMBER(7) | N | Foreign key, referring to D\_CAREGIVERS |
| CUID | NUMBER(7) | N | Foreign key, referring to D\_UNITS |
| VALUE1 | VARCHAR2(110) | N | Can be numeric or alphabetic values |
| VALUE1NUM | NUMBER | N | Numeric values only |
| VALUE1UOM | VARCHAR2(120) | N | Unit of measure for vlaue1 |
| COMMENTS | NCLOB | Y | New data from MetaVision, contains units and normal range of the measurements. |
| VALUE2 | VARCHAR2(110) | N | For old data only, Can be numeric or alphabetic values |
| VALUE2NUM | NUMBER | N | For old data only, Numeric values only |
| VALUE2UOM | VARCHAR2(20) | N | For old data only, Unit of Measure for vlaue2 |
| RESULTSTATUS | VARCHAR2(20) | N | For old data (v2.6) only |
| STOPPED | VARCHAR2(20) | N | For old data (v2.6) only |
| WARNING | NUMBER(1) | Y | For new data |
| ERROR | NUMBER(1) | Y | For new data |

#### **2.5.6 Fluids (IOEvents, Additives, Totalbalevents**)

In version 2.6, patient input/output (IO) data is recorded in the ioevents, d\_ioitems, deliveries, totalbalevents and additives tables.

In version 3.0, we retired the DELIVERIES table since the data contained in this table (RATE, RATEUOM etc.) are included in the IOEVENTS table. As mentioned earlier, the D\_IOITEMS table has been merged into the D\_ITEMS table.

***Please note that the ITEMIDs for IO or ADDITIVES ITEMS have been shifted up by 40001 to avoid overlapping with ITEMIDs for the CHART ITEMS (refer to table 3).***

As with the MEDEVENTS table, the IOEVENTS and ADDITIVES tables in v3.0 have some new columns like ‘ORDERID’, a foreign key referring to the ORDERENTRY table. Users can get more detailed medical order-related information from the ORDERENTRY table.

As in the MEDEVENTS table, the new IO data includes ‘STARTTIME’ and ‘ENDTIME’, making calculations of total INPUT/OUTPUT volumes much easier.

Another change to these tables is that the ‘LABEL’ of ITEMID is included in the table; users can do word-based searches right on the events table, no need to join with the D\_ITEMS table first.

**Table 13. Description of the Columns in the ADDITIVES table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data Type*** | ***New Column*** | ***Remarks*** |
| SUBJECT\_ID | NUMBER(7) | N | Foreign key, referring to D\_PATIENTS |
| ICUSTAY\_ID | NUMBER(7) | N | Foreign key, referring to ICUSTAYEVENTS |
| ORDERID | NUMBER(10) | Y | Foreign key, referring to ORDERENTRY |
| ITEMID | NUMBER(7) | N | Foreign key, referring to D\_ITEMS |
| LABEL | VARCHAR2(100) | Y | Included for easy word-based searches |
| IOITEMID | NUMBER(7) | N |  |
| IOITEMLABEL | VARCHAR2(100) | Y | Included for easy word-based searches |
| CHARTTIME | TIMESTAMP(6) WITH TIME ZONE | N | Used for old data, null for new data |
| STARTTIME | TIMESTAMP(6) WITH TIME ZONE | Y | Used for new data, null for old data |
| ENDTIME | TIMESTAMP(6) WITH TIME ZONE | Y | Used for new data, null for old data |
| ELEMID | NUMBER(7) | N |  |
| CGID | NUMBER | N |  |
| CUID | NUMBER | N |  |
| VALUE | NUMBER | N | Called ‘AMOUNT’ in v2.6 |
| UOM | NVARCHAR2(70) | Y | Called ‘DOSEUNITS’ in v2.6 |
| IOITEMVALUE | NUMBER | N | Called ‘SOLVOLUME’ in v2.6 |
| IOITEMUOM | NVARCHAR2(101) | N | Called ‘SOLUNITS’ in v2.6 |

**Table 14. Description of the columns in the IOEVENTS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data Type*** | ***New Column*** | ***Remarks*** |
| SUBJECT\_ID | NUMBER(7) | N | Foreign key, referring to D\_PATIENTS |
| ICUSTAY\_ID | NUMBER(7) | N | Foreign key, referring to ICUSTAYEVENTS |
| ORDERID | NUMBER(7) | Y | Foreign key, referring to ORDERENTRY |
| ITEMID | NUMBER(7) | N | Foreign key, referring to D\_ITEMS |
| LABEL | NVARCHAR2(366) | Y | Included for easy word-based searches |
| CHARTTIME | TIMESTAMP(6) WITH TIME ZONE | N | Used for old data, null for new data |
| ELEMID | NUMBER(7) | N |  |
| ALTID | NUMBER(7) | N |  |
| REALTIME | TIMESTAMP(6) WITH TIME ZONE | N | Used for old data, null for new data |
| STARTTIME | TIMESTAMP(6) WITH TIME ZONE | Y | Used for new data, null for old data |
| ENDTIME | TIMESTAMP(6) WITH TIME ZONE | Y | Used for new data, null for old data |
| CGID | NUMBER | N |  |
| CUID | NUMBER | N |  |
| VALUE | NUMBER | N | Called ‘VOLUME’ in v2.6 |
| UOM | NVARCHAR2(101) | N | Called ‘VOLUMEUOM’ in v2.6 |
| UNITSHUNG | NUMBER(5) | N | Called ‘SOLVOLUME’ in v2.6 |
| UNITSHUNGUOM | VARCHAR2(20) | N | Called ‘SOLUNITS’ in v2.6 |
| NEWBOTTLE | NUMBER | N |  |
| STOPPED | VARCHAR2(20) | N |  |
| ESTIMATE | VARCHAR2(20) | N |  |

**Table 15. Description of the columns in the TOTALBALEVENTS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data Type*** | ***New Column*** | ***Remarks*** |
| SUBJECT\_ID | NUMBER(7) | N | Foreign key, referring to D\_PATIENTS |
| ICUSTAY\_ID | NUMBER(7) | N | Foreign key, referring to ICUSTAYEVENTS |
| CHARTTIME | TIMESTAMP(6) WITH TIME ZONE | N |  |
| ELEMID | NUMBER | N |  |
| REALTIME | TIMESTAMP(6) WITH TIME ZONE | N |  |
| CGID | NUMBER | N | Foreign key, referring to D\_CAREGIVERS |
| CUID | NUMBER | N | Foreign key, referring to D\_CAREUNITS |
| ITEMID | NUMBER | N | Foreign key, referring to D\_ITEMS |
| LABEL | VARCHAR2(100) | Y |  |
| VOLUME | VARCHAR2(100) | N | Called ‘PERVOLUME’ in v2.6 |
| CUMITEMID | NUMBER | Y |  |
| CUMLABEL | VARCHAR2(40) | Y |  |
| CUMVOLUME | VARCHAR2(100) | N |  |
| UOM | NVARCHAR2(10) | Y |  |
| ACCUMPERIOD | VARCHAR2(100) | N |  |
| APPROX | VARCHAR2(100) | N |  |
| RESET | NUMBER | N |  |
| STOPPED | VARCHAR2(20) | N |  |

#### 2.5.7 Notes (Noteevents table)

In version 3.0, we added three new types of notes in the NOTEEVENTS table: ECG reports, Echo reports, and the physician notes from MetaVision. Here is a list of NOTES categories in v3.0 and v2.6 (Extracted from the NOTEEVENTS table, exact upper/lower case match).

**Table 16. Comparison of Notes *categories* in NOTEEVENTS table**

|  |  |
| --- | --- |
| ***Categories of Notes in v3.0*** | ***Categories of Notes in v2.6*** |
| ECG\_REPORT | *(Not available in v2.6)* |
| ECHO\_REPORT | *(Not available in v2.6)* |
| DISCHARGE\_SUMMARY | DISCHARGE\_SUMMARY |
| NURSING/OTHER | Nursing/Other |
| PROVIDER\_NOTE | *(Not available in v2.6)* |
| RADIOLOGY\_REPORT | RADIOLOGY\_REPORT |

The Nursing/Other category contains the nursing and respiratory therapist notes collected (2008 or earlier) from the CareVue system. Provider notes collected from the MetaVision are under the PROVIDER\_NOTE category and include notes by physicians, nurses, therapists and others. The table structure of NOTEEVENTS did not change between v2.6 and v3.0. However, the CHARTTIME of DISCHARGE\_SUMMARY notes used ‘DISCHARGE\_TIME’ in v3.0 while the ‘ADMISSION\_TIME’ was used in v2.6.

Note: Some entries in the NOTEEVENTS table contain empty text due to the null entry in the original text. These entries will be removed in the final release to avoid confusion.

#### 2.5.8 Procedures (Procedureevents table)

In v2.6, Procedureevents table is a relatively simple table, contains only 5 columns: SUBJECT\_ID, HADM\_ID, ITEMID, SEQUENCE\_NUM, PROC\_DT.

In v3.0, six new columns are added to this table as shown in the following table. The new procedures all have ORDERIDs, related order information can be found in ORDERENTRY table. We also included ‘LABEL’ for each ITEMID, make it easier for word-based searches. Also, each new procedure has a ‘START’ and ‘END’ time.

In v2.6, checking for INTUBATION/EXTUBATION event and time was not an easy task. In the new version, it’s very easy to find these events in the Procedureevents table.

**Table 17. Description of the columns in the PROCEDUREEVENTS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data Type*** | ***New Column*** | ***Remarks*** |
| SUBJECT\_ID | NUMBER(7) | N | Foreign key, referring to D\_PATIENTS |
| HADM\_ID | NUMBER(7) | N | Foreign key, referring to ADMISSIONS |
| ORDERID | NUMBER(7) | Y | Foreign key, referring to ORDERENTRY |
| ORDERCATEGORYNAME | VARCHAR2(30) | Y |  |
| ITEMID | NUMBER(7) | N | Foreign key, referring to D\_ITEMS |
| LABEL | VARCHAR2(100) | Y | Included for easy word-based searches |
| PROC\_DT | DATE | N |  |
| SEQUENCE\_NUM | NUMBER | N |  |
| STARTTIME | DATE | Y | Used for new data, null for old data |
| ENDTIME | DATE | Y | Used for new data, null for old data |
| CGID | NUMBER | Y |  |

#### [2.5.9 Laboratory and microbiology tests](http://mimic.physionet.org/UserGuide/node33.html)

In v3.0, the Labevents table was re-generated from the raw lab tests data set from BIDMC. As there have been additions of new lab tests over the years or name changes of lab tests, and the majority of lab tests don’t have LOINC codes, it was very hard to map to the Lab ITEMIDs in v2.6. Therefore, the ITEMIDs for Labevents are re-generated based on current lab tests. However, whenever possible, the old lab ITEMID was mapped and listed in the D\_ITEMS table (ORIGIN=’LAB’) (see table 4). Also, we tried our best to map to the current LOINC codes as well.

Like other facts (…events) tables in v3.0, we included related ITEMID descriptive columns like ‘TESTNAME’, ‘FLUID’, ‘CATEGORY’ and ‘LOINC\_CODE’, much easier for word-based searches.

Please note that, we collect all labs for a patient independent of when they were done. Some labs are from subsequent clinic visits, for example.

**Table 18. Description of the columns in the LABEVENTS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data Type*** | ***New Column*** | ***Remarks*** |
| SUBJECT\_ID | NUMBER | N | Foreign key, referring to D\_PATIENTS |
| HADM\_ID | NUMBER | N | Foreign key, referring to ADMISSIONS |
| ITEMID | NUMBER(38) | N | Foreign key, referring to D\_ITEMS |
| CHARTTIME | TIMESTAMP(6) WITH TIME ZONE | N |  |
| TEST\_NAME | VARCHAR2(50) | Y | Included for easy word-based searches |
| VALUE | VARCHAR2(200) | N |  |
| VALUEUOM | VARCHAR2(15) | N |  |
| FLAG | VARCHAR2(10) | Y |  |
| FLUID | VARCHAR2(40) | Y |  |
| CATEGORY | VARCHAR2(20) | Y |  |
| LOINC\_CODE | VARCHAR2(15) | Y |  |

The Microbiologyevents table in v3.0 also included names, descriptions of the ITEMIDs. The following table lists all the columns in this table in v3.0, all new columns are noted.

**Table 19. Description of the columns in the V3.0 MICROBIOLOGYEVENTS table**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Column name*** | ***Data Type*** | ***New Column*** | ***Remarks*** |
| SUBJECT\_ID | NUMBER | N | Foreign key, referring to D\_PATIENTS |
| HADM\_ID | NUMBER | N | Foreign key, referring to ADMISSIONS |
| TIME | DATE | N | ‘CHARTTIME’ in v2.6 |
| SPEC\_TYPE\_CD | VARCHAR2(10) | Y | Included for easy word-based searches |
| SPEC\_ITEMID | NUMBER(7) | N | Foreign key, referring to D\_ITEMS |
| SPEC\_TYPE\_DESC | VARCHAR2(100) | Y | Included for easy word-based searches |
| ORG\_CD | VARCHAR2(4) | Y | Included for easy word-based searches |
| ORG\_ITEMID | NUMBER(7) | N |  |
| ORG\_NAME | VARCHAR2(100) | Y | Included for easy word-based searches |
| ISOLATE\_NUM | VARCHAR2(10) | N |  |
| AB\_CD | VARCHAR2(2) | Y | Included for easy word-based searches |
| AB\_ITEMID | NUMBER(7) | N |  |
| AB\_NAME | VARCHAR2(100) | Y | Included for easy word-based searches |
| DILUTION\_AMOUNT | VARCHAR2(10) | N |  |
| DILUTION\_COMPARISON | VARCHAR2(10) | N |  |
| INTERPRETATION | VARCHAR2(1) | N |  |

## [3.0 Summary](http://mimic.physionet.org/UserGuide/node35.html)

MIMIC2 II version 3.0 is quite different from previous versions since this is the first version requiring the mapping and combination of ICU data from two totally different source databases (CareVue and MetaVision). As we didn’t have good documentation for the MetaVision database and the database structure was totally different, it was very hard to find all the matching data from this large database. The mapping process was mainly based on searching and studying the data/tables in MetaVision.

This new version mapped and combined data from MIMIC2V26 (45 tables), MetaVision ( 506 tables), additional data sets from BIDMC (23 tables) and Social Security data sets (2 tables).

Since the source databases were so different, even with our best effort to make the new database schema similar to the MIMIC II v2.6 tables and structures, there had to be some changes. The majority of the new changes added great value to the new database, but there might be some changes that users will have to re-learn and get used to. We are hoping to document the changes as thoroughly as we can to make this learning curve easier.

Also, since the data mapping and merging process was a challenging process and our first try, there might be issues or bugs. We have gone through some data integrity checks but we would appreciate if you can report to us any potential issues or bugs you find in the process of testing/using this new version of MIMIC II database as well.

One more note is that since almost all tables have grown much bigger in this version, you may find your search process slower. We are still in the process of tuning the database and tables to make your searches faster. Your feedback on this aspect would be much appreciated as well! Email your comments and observations to [mimic-support@physionet.org](file:///C:\Users\rgmark\Dropbox%20(MIT)\MIMIC%20II%20v3.0\mimic-support@physionet.org).

## 4.0 Appendix –list of commonly used items in v2.6 and v3.0

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ITEM** | **ITEMID** | **LABEL** | **CATEGORY** | **ORIGIN** | **VERSION** |
| **Bicarbonate (HCO3)** | 787 | Carbon Dioxide | Chemistry | CHART | 2.6, 3.0 |
|  | 812 | HCO3 | ABG | CHART | 2.6, 3.0 |
|  | 3810 | Total CO2 | Chemistry | CHART | 2.6, 3.0 |
|  | 227443 | HCO3 (serum) | Labs | METAVISION | 3.0 |
| **Bilirubin** | 1538 | Total Bili | Chemistry | CHART | 2.6, 3.0 |
|  | 848 | Total Bili (0-1.5) | Chemistry | CHART | 2.6, 3.0 |
|  | 225690 | Total Bilirubin | Labs | METAVISION | 3.0 |
| **Invasive (Arterial) Blood Pressure** | 51 | Arterial BP |  | CHART | 2.6, 3.0 |
|  | 52 | Arterial BP Mean |  | CHART | 2.6, 3.0 |
|  | 220050 | Arterial Blood Pressure systolic | Routine Vital Signs | METAVISION | 3.0 |
|  | 220051 | Arterial Blood Pressure diastolic | Routine Vital Signs | METAVISION | 3.0 |
|  | 220052 | Arterial Blood Pressure mean | Routine Vital Signs | METAVISION | 3.0 |
| **Non Invasive Blood Pressure (NIBP)** | 455 | NBP |  | CHART | 2.6, 3.0 |
|  | 456 | NBP Mean |  | CHART | 2.6, 3.0 |
|  | 40752 | ileostomy |  | IO | 2.6, 3.0 |
|  | 41150 | Bivalirudin mg/kg/hr | IV Drips | IO | 2.6, 3.0 |
| **Blood Transfusions** | 40032 | RBC'S | Free Form Intake | IO | 2.6, 3.0 |
|  | 40145 | Packed RBC's | IV Infusions | IO | 2.6, 3.0 |
|  | 40173 | OR Packed RBC's | OR Intake | IO | 2.6, 3.0 |
|  | 40398 | Washed PRBC's | IV Infusions | IO | 2.6, 3.0 |
|  | 40735 | Packed RBC's 350.0ml | IV Infusions | IO | 2.6, 3.0 |
|  | 40981 | Packed RBC's 150.0ml | IV Drips | IO | 2.6, 3.0 |
|  | 41012 | Packed RBC's 750.0ml | IV Infusions | IO | 2.6, 3.0 |
|  | 41107 | Packed RBC's 75.0ml | IV Infusions | IO | 2.6, 3.0 |
|  | 41142 | Packed RBC's 372.0ml | IV Infusions | IO | 2.6, 3.0 |
|  | 41586 | Packed RBC's 100.0ml | IV Infusions | IO | 2.6, 3.0 |
|  | 41738 | Packed RBC's 125.0ml | IV Infusions | IO | 2.6, 3.0 |
|  | 41739 | Packed RBC's 400.0ml | IV Infusions | IO | 2.6, 3.0 |
|  | 42910 | Packed RBC's 325.0ml | IV Infusions | IO | 2.6, 3.0 |
|  | 43736 | Packed RBC's 95.0ml | IV Drips | IO | 2.6, 3.0 |
|  | 43993 | Packed RBC's 500.0ml | IV Infusions | IO | 2.6, 3.0 |
|  | 44246 | Packed RBC's 3.0ml | IV Drips | IO | 2.6, 3.0 |
|  | 44259 | Packed RBC's 450.0ml | Blood Products | IO | 2.6, 3.0 |
|  | 44423 | Packed RBC's 300.0ml | IV Infusions | IO | 2.6, 3.0 |
| **Cardiac Output (CO)** | 89 | C.O. (fick) |  | CHART | 2.6, 3.0 |
|  | 90 | C.O.(thermodilution) |  | CHART | 2.6, 3.0 |
|  | 1601 | C.C.O |  | CHART | 2.6, 3.0 |
|  | 2112 | continuous C.O |  | CHART | 2.6, 3.0 |
|  | 220088 | Cardiac Output (thermodilution) | Hemodynamics | METAVISION | 3.0 |
|  | 224842 | Cardiac Output (CCO) | Hemodynamics | METAVISION | 3.0 |
| **Carbon Dioxide (CO2)** | 777 | Arterial CO2(Calc) | ABG | CHART | 2.6, 3.0 |
|  | 787 | Carbon Dioxide | Chemistry | CHART | 2.6, 3.0 |
|  | 3808 | TCO2 (21-30) | Chemistry | CHART | 2.6, 3.0 |
|  | 3810 | Total CO2 | Chemistry | CHART | 2.6, 3.0 |
|  | 4199 | TCO2 (cap) | Other ABGs | CHART | 2.6, 3.0 |
|  | 225698 | TCO2 (calc) Arterial | Labs | METAVISION | 3.0 |
| **Creatinine (highest)** | 791 | Creatinine (0-1.3) | Chemistry | CHART | 2.6, 3.0 |
|  | 1525 | Creatinine | Chemistry | CHART | 2.6, 3.0 |
|  | 3750 | Creatinine (0-0.7) | Chemistry | CHART | 2.6, 3.0 |
|  | 220615 | Creatinine | Labs | METAVISION | 3.0 |
| **Central Venous Pressure (CVP)** | 113 | CVP |  | CHART | 2.6, 3.0 |
|  | 1103 | cvp |  | CHART | 2.6, 3.0 |
|  | 220074 | Central Venous Pressure | Hemodynamics | METAVISION | 3.0 |
|  |  |  |  |  |  |
| **Glucose Levels** | 811 | Glucose (70-105) | Chemistry | CHART | 2.6, 3.0 |
|  | 1529 | Glucose | Chemistry | CHART | 2.6, 3.0 |
|  | 220621 | Glucose (serum) | Labs | METAVISION | 3.0 |
|  | 226537 | Glucose (whole blood) | Labs | METAVISION | 3.0 |
| **Intra-aortic balloon (IABP) pump rate** | 224 | IABP Mean |  | CHART | 2.6, 3.0 |
|  | 225 | IABP setting |  | CHART | 2.6, 3.0 |
|  | 2515 | IABP-BP |  | CHART | 2.6, 3.0 |
|  | 2865 | iabp-bp |  | CHART | 2.6, 3.0 |
|  | 6424 | IABP BP |  | CHART | 2.6, 3.0 |
|  | 42163 | k phosphate iv | Free Form Intake | IO | 2.6, 3.0 |
|  | 42392 | right hand bag |  | IO | 2.6, 3.0 |
|  | 224322 | IABP Mean | IABP | METAVISION | 3.0 |
| **Intra-cranial Pressure (ICP)** | 226 | ICP |  | CHART | 2.6, 3.0 |
|  | 5856 | icp |  | CHART | 2.6, 3.0 |
|  | 1374 | ICP Right |  | CHART | 2.6, 3.0 |
|  | 2045 | icp left |  | CHART | 2.6, 3.0 |
|  | 2745 | ICP LEFT |  | CHART | 2.6, 3.0 |
|  | 220765 | Intra Cranial Pressure | Hemodynamics | METAVISION | 3.0 |
| **IV Fluids** | 40002 | 24h Total In |  | IO | 2.6, 3.0 |
|  | 40003 | 24h Total Out |  | IO | 2.6, 3.0 |
|  | 40019 | IV Infusion In Total |  | IO | 2.6, 3.0 |
|  | 40030 | Net Hourly Balance |  | IO | 2.6, 3.0 |
|  | 225103 | Intravenous / IV access prior to admission | Adm History/FHPA | METAVISION | 3.0 |
| **Lactate** | 818 | Lactic Acid(0.5-2.0) | Chemistry | CHART | 2.6, 3.0 |
|  | 1531 | Lactic Acid | Chemistry | CHART | 2.6, 3.0 |
|  | 225668 | Lactic Acid | Labs | METAVISION | 3.0 |
| **pH** | 780 | Arterial pH | ABG | CHART | 2.6, 3.0 |
|  | 1126 | Art.pH | ABG | CHART | 2.6, 3.0 |
|  | 4202 | pH (cap) | Other ABGs | CHART | 2.6, 3.0 |
|  | 4753 | pH (Art) | ABG | CHART | 2.6, 3.0 |
|  | 40866 | NS BOLUS | Free Form Intake | IO | 2.6, 3.0 |
|  | 223830 | PH (Arterial) | Labs | METAVISION | 3.0 |
| **Potassium** | 829 | Potassium (3.5-5.3) | Chemistry | CHART | 2.6, 3.0 |
|  | 1535 | Potassium | Chemistry | CHART | 2.6, 3.0 |
|  | 3792 | Potassium (3.5-5.3) | Chemistry | CHART | 2.6, 3.0 |
|  | 227464 | Potassium (whole blood) | Labs | METAVISION | 3.0 |
| **Pressor Medications** | 30043 | Dopamine |  | MED | 2.6, 3.0 |
|  | 30044 | Epinephrine |  | MED | 2.6, 3.0 |
|  | 30046 | Isuprel |  | MED | 2.6, 3.0 |
|  | 30047 | Levophed |  | MED | 2.6, 3.0 |
|  | 30051 | Vasopressin |  | MED | 2.6, 3.0 |
|  | 30119 | Epinephrine-k |  | MED | 2.6, 3.0 |
|  | 30120 | Levophed-k |  | MED | 2.6, 3.0 |
|  | 30127 | Neosynephrine |  | MED | 2.6, 3.0 |
|  | 30128 | Neosynephrine-k |  | MED | 2.6, 3.0 |
|  | 30307 | Dopamine Drip |  | MED | 2.6, 3.0 |
|  | 30309 | Epinephrine Drip |  | MED | 2.6, 3.0 |
| **Pulmonary Arterial Pressure (PAP)** | 491 | PAP Mean |  | CHART | 2.6, 3.0 |
|  | 492 | PAP S/D |  | CHART | 2.6, 3.0 |
|  | 224357 | PAP Alarm (Lo/Hi) | Alarms | METAVISION | 3.0 |
|  | 227241 | PAP Alarm Source | Alarms | METAVISION | 3.0 |
| **Respiration Rate** | 614 | Resp Rate (Spont) |  | CHART | 2.6, 3.0 |
|  | 615 | Resp Rate (Total) |  | CHART | 2.6, 3.0 |
|  | 618 | Respiratory Rate |  | CHART | 2.6, 3.0 |
|  | 653 | Spont. Resp. Rate |  | CHART | 2.6, 3.0 |
|  | 1635 | HIGH Resp Rate |  | CHART | 2.6, 3.0 |
|  | 1884 | Spont Resp rate |  | CHART | 2.6, 3.0 |
|  | 3337 | Breath Rate |  | CHART | 2.6, 3.0 |
|  | 3603 | Resp Rate |  | CHART | 2.6, 3.0 |
|  | 220210 | Respiratory Rate | Respiratory | METAVISION | 3.0 |
|  | 224689 | Respiratory Rate (spontaneous) | Respiratory | METAVISION | 3.0 |
|  | 224690 | Respiratory Rate (Total) | Respiratory | METAVISION | 3.0 |
| **Sodium** | 837 | Sodium (135-148) | Chemistry | CHART | 2.6, 3.0 |
|  | 1536 | Sodium | Chemistry | CHART | 2.6, 3.0 |
|  | 3803 | Sodium (135-148) | Chemistry | CHART | 2.6, 3.0 |
|  | 226534 | Sodium (whole blood) | Labs | METAVISION | 3.0 |
| **Temperature** | 676 | Temperature C |  | CHART | 2.6, 3.0 |
|  | 677 | Temperature C (calc) |  | CHART | 2.6, 3.0 |
|  | 678 | Temperature F |  | CHART | 2.6, 3.0 |
|  | 679 | Temperature F (calc) |  | CHART | 2.6, 3.0 |
|  | 223761 | Temperature Fahrenheit | Routine Vital Signs | METAVISION | 3.0 |
|  | 223762 | Temperature Celsius | Routine Vital Signs | METAVISION | 3.0 |
|  | 226181 | Temperature Celsius (calc) | Routine Vital Signs | METAVISION | 3.0 |
|  | 226182 | Temperature Fahrenheit (calc) | Routine Vital Signs | METAVISION | 3.0 |
| **Urine Output** | 40027 | Urine Out Total |  | IO | 2.6, 3.0 |
|  | 43463 | urine |  | IO | 2.6, 3.0 |
|  | 43166 | Urine Output Total |  | IO | 2.6, 3.0 |
|  | 43176 | Urine . |  | IO | 2.6, 3.0 |
|  | 43054 | URINE OUT |  | IO | 2.6, 3.0 |
|  | 43520 | urine amnt |  | IO | 2.6, 3.0 |
|  | 226568 | Total Urine Output | Fluid Balance | METAVISION | 3.0 |
|  | 226641 | Interval Urine Output | Fluid Balance | METAVISION | 3.0 |
| **Ventilators** | 39 | Airway Size |  | CHART | 2.6, 3.0 |
|  | 505 | PEEP |  | CHART | 2.6, 3.0 |
|  | 506 | PEEP Set |  | CHART | 2.6, 3.0 |
|  | 535 | Peak Insp. Pressure |  | CHART | 2.6, 3.0 |
|  | 543 | Plateau Pressure |  | CHART | 2.6, 3.0 |
|  | 544 | Plateau Time (7200) |  | CHART | 2.6, 3.0 |
|  | 545 | Plateau-Off |  | CHART | 2.6, 3.0 |
|  | 619 | Respiratory Rate Set |  | CHART | 2.6, 3.0 |
|  | 683 | Tidal Volume (Set) |  | CHART | 2.6, 3.0 |
|  | 720 | Ventilator Mode |  | CHART | 2.6, 3.0 |
|  | 721 | Ventilator No. |  | CHART | 2.6, 3.0 |
|  | 722 | Ventilator Type |  | CHART | 2.6, 3.0 |
|  | 732 | Waveform-Vent |  | CHART | 2.6, 3.0 |
|  | 224696 | Plateau Pressure | Respiratory | METAVISION | 3.0 |
| **White Blood Cell Count (WBC)** | 861 | WBC (4-11000) | Hematology | CHART | 2.6, 3.0 |
|  | 1127 | WBC (4-11000) | Hematology | CHART | 2.6, 3.0 |
|  | 1542 | WBC | Hematology | CHART | 2.6, 3.0 |
|  | 4200 | WBC 4.0-11.0 | Heme/Coag | CHART | 2.6, 3.0 |
|  | 220546 | WBC | Labs | METAVISION | 3.0 |