

UMN i2b2 Data Description

Data Sources

The i2b2 database includes clinical data from the Epic Electronic Health Record (EHR) of patients seen at Fairview Health Services (FHS).

Hospitals:

- University of Minnesota Medical Center (UMMC) - Fairview
- University of Minnesota Amplatz Childrens Hospital - Fairview
- Fairview Southdale Hospital
- Fairview Ridges Hospital
- Fairview Lakes Medical Center
- Fairview Northland Medical Center

Clinics:

- Fairview Clinics
- University of Minnesota Physicians (UMP) Clinics at UMMC (MSA and PSA clinics)

Patients

Included:

Patients seen at the participating Fairview Health Services sites are included.

Excluded:

Patients who did not consent to use of their data for research purposes are excluded from the data.

Patients who have been seen at an affiliate clinic of Fairview are excluded. Affiliate clinics have adopted Fairview's EHR system, but are independent business entities.

Dates

The earliest data available is as follows:

- FHS hospitals: approximately 2005
- FHS outpatient clinics: approximately 1993
- UMP hospital based clinics: approximately 2005.

We do not have historical data from other legacy systems of FHS unless it was imported into Clarity.

Date Shifts

Because the UMN implementation of i2b2 includes only deidentified data, all dates in the dataset have been obfuscated. All dates of birth and visit dates have been shifted by ± 180 days. This means that the time-line for each patient is accurate though dates across patients are not comparable.

Refresh Frequency

i2b2 data will be refreshed monthly, which means that at all times you can expect the counts you find to be current to within 30 days.

Data Elements

The following data elements are included in the current UMN release of i2b2.

Data Element	Description	Source System	Excluded Source
Demographics	Data elements: <ul style="list-style-type: none"> • Age • Gender • Language • Marital status • Race/ethnicity • Religion • Vital status • Zip codes 	FHS/ UMP	N/A
Diagnosis ICD9	The diagnosis related to the encounter Includes modifiers: <ul style="list-style-type: none"> • Principal Diagnosis • Secondary Diagnosis 	FHS/UMP	UMP billing data
Outpatient Vitals	<ul style="list-style-type: none"> • BMI • BP • Head circumference • Height • Pulse • Respiration • Temperature • Weight 	FHS Outpatient clinics/UMP	FHS hospitals (i.e. Inpatient Vitals)
Problems	Contains data from the patients' problem lists in the EHR	FHS/UMP	N/A
Procedures CPT	<ul style="list-style-type: none"> • Classified into 5 categories: • Anesthesia • Evaluation and Management • Medicine Services • Radiology • Surgical procedures 	FHS/UMP	UMP Billing data
Visits – Encounter Specialty	The medical specialty practiced within the department (e.g. allergy, cardiology)	FHS/UMP	N/A
Visits – Encounter Location	The location of the encounter down to the department level (e.g. Andover clinic -> AN Family Practice)	FHS/UMP	N/A

Medications	<ul style="list-style-type: none"> • By classification • By category • Able to be drilled down to specific medication 	FHS/UMP	N/A
Labs	<ul style="list-style-type: none"> • By classification • By category • Able to be drilled down to specific lab tests 	FHS/UMP	N/A

Standard Terminologies

Data Element	Standard Terminology	Version Date
Demographics		
Sex	Health Level Seven (HL7) Administrative Gender	v. 2.6, 2000
Marital Status	HL7 Marital Status	v. 2.6, 2007
Race & Ethnicity	CDC Race and Ethnicity code set	v. 1.0, 2000
Language	ISO 639-1 represented by IANA Language Tag Registry	v. 2.6, 2007
Religion	HL7 Religious Affiliation	
Diagnosis	ICD-9	Last updated in 2011
Procedures	CPT	Last updated in 2011

De-identification

UMN's instance of i2b2 employs a de-identified data set that excludes any of the eighteen HIPAA identifiers. This de-identification includes the following small modifications to the underlying data:

- Dates of birth and dates of visits have been shifted by ± 180 days.
- All ages over 89 are set to 90 years.
- Only 3 digits of the zip code are included. Additionally, all the zip codes with population below 20,000 people are suppressed.