Weill Cornell Medical College

Architecture for Research Computing in Health (ARCH)
Using i2b2 to Find Patient Cohorts of Interest

Three Basic Query Types
1. Treat all groups Independently (**any point in time**)
2. Selected groups occur in the same financial encounter (**same visit**)
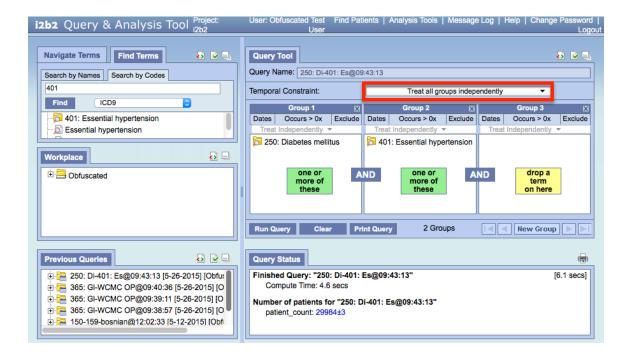3. Define sequence of events

TREAT ALL GROUPS INDEPENDENTLY

- Did event occur at **any point in time** in the history of the patient's EMR?

  EXAMPLES

  > *"How many patients have been seen at the 2315 Broadway Interventional Radiology clinic and have had a colectomy at some point in their medical history? "*

  > *"How many patients have been diagnosed with both diabetes and hypertension at some point in their medical history?"*
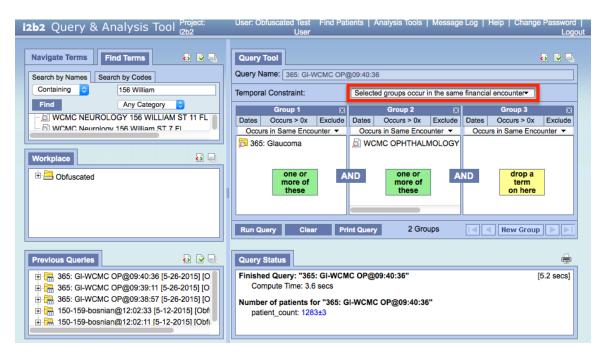
SELECTED GROUPS OCCUR IN THE SAME FINANCIAL ENCOUNTER

- Did the events occur **at the same time and in the same visit** in the history of the EMR?

  EXAMPLES

  > *"During the same visit, how many patients were diagnosed with both glaucoma and diabetes?"*

  > *"During the same visit, how many patients were diagnosed with glaucoma and were seen at the 156 William Street Weill Cornell Medical College Ophthalmology clinic."*

DEFINE SEQUENCE OF EVENTS

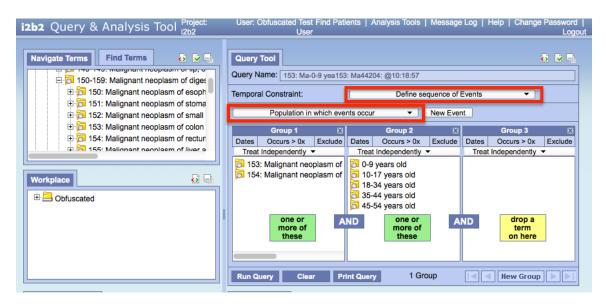- Did event A occur at **a specific point in time** in relation to event B, event C, …?

  EXAMPLE

  > *"How many patients were diagnosed with early onset (<55yr) colon cancer and had a colectomy after diagnosis and within 14 days after diagnosis?"*

Step 1

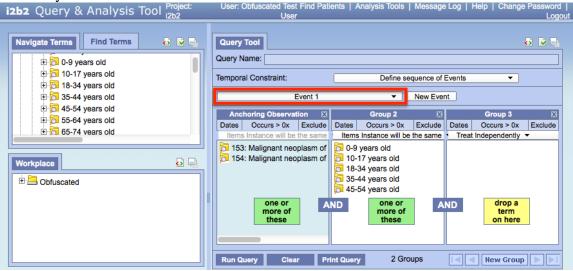### Population in which events occur

Define query population: Colon cancer diagnosis via ICD-9 codes AND patients under 55yr

Step 2:

Event 1

Define Event 1: Colon cancer diagnosis via ICD-9 codes AND patients under 55yr

Step 3:

Event 2

Define Event 2: Colectomy via CPT procedures

Step 4:

Define order of events

Event 2 (colectomy) occur from 1 to 14 days after Event 1 (colon cancer)