

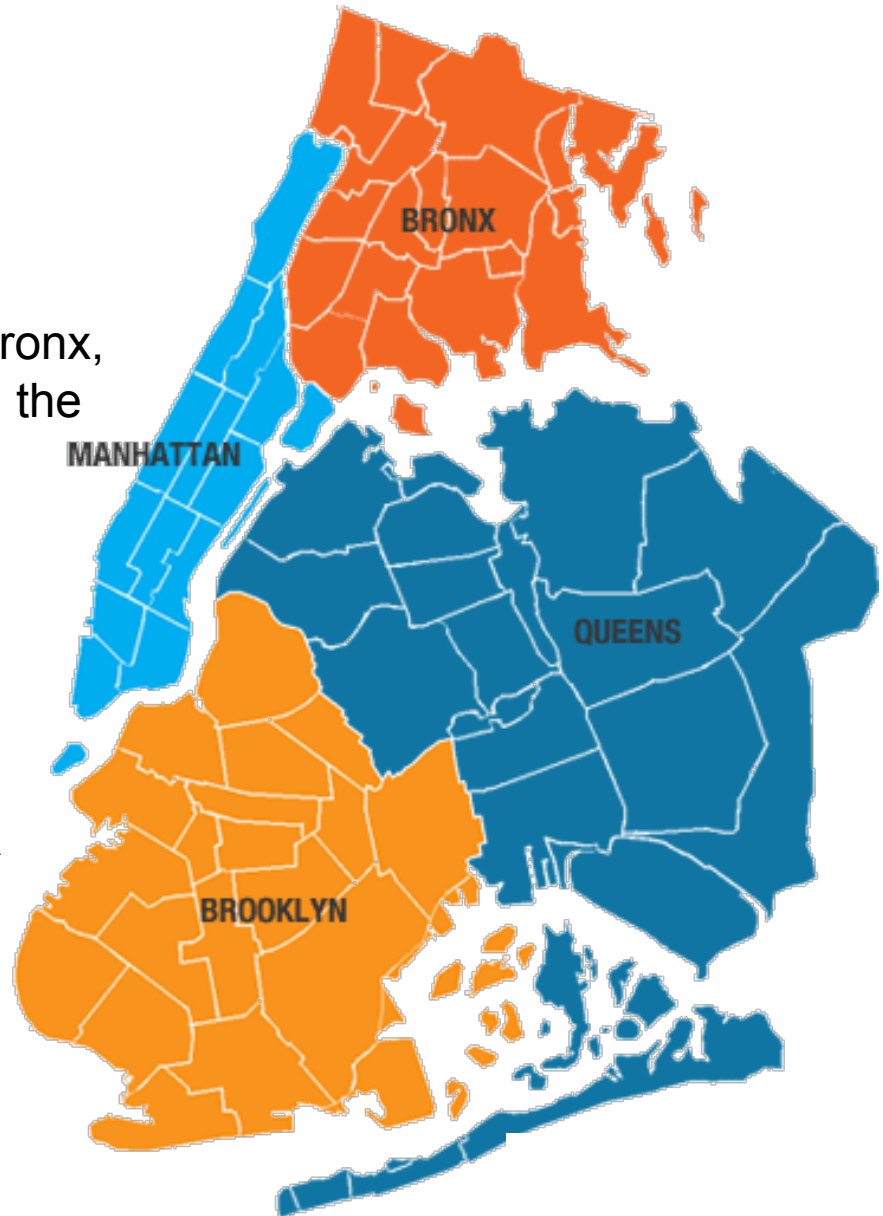
**HELLO**  
my name is

**David**

**...and I have struggled  
with DATEDIFF( )**

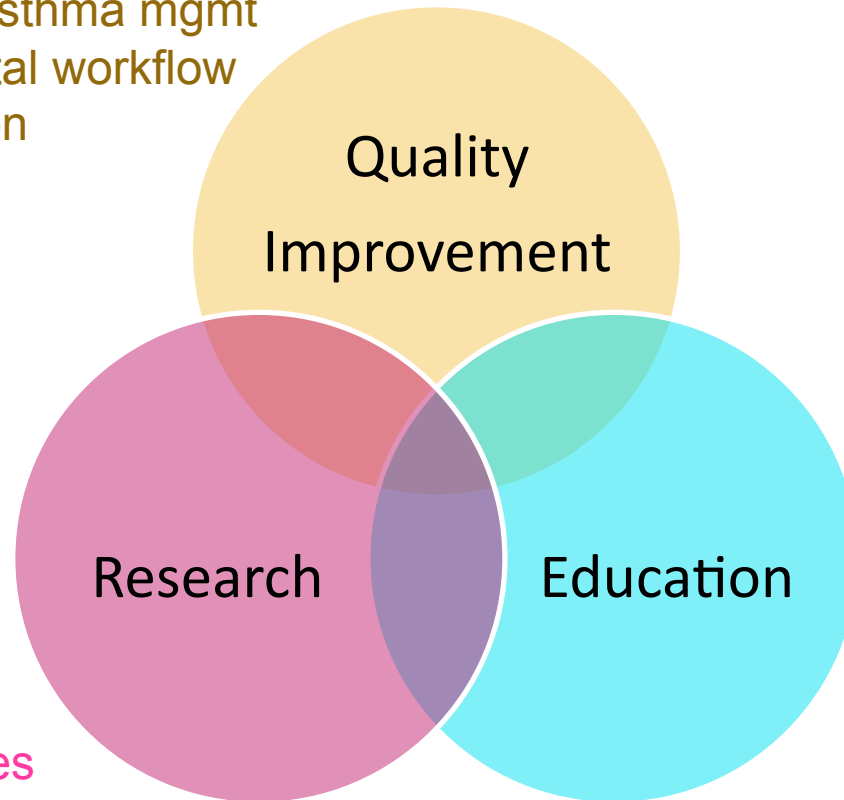


- ▶ Large academic medical center (Bronx, New York), 11<sup>th</sup> Largest provider in the U.S.
  - 4 hospitals, 1491 beds
  - 94,000 discharges
  - 300,000 ED visits
  - 21 clinics , 2.6M clinic visits
  
- ▶ 225,000 covered lives through IPA
  
- ▶ Pioneer ACO
  
- ▶ University Hospital of the Albert Einstein College of Medicine



# One tool to unify:

Diabetes, Asthma mgmt  
LOS, hospital workflow  
Readmission



40+ articles  
\$18M grant awards

**Montefiore**

CLINICAL



LOOKING  
GLASSES®

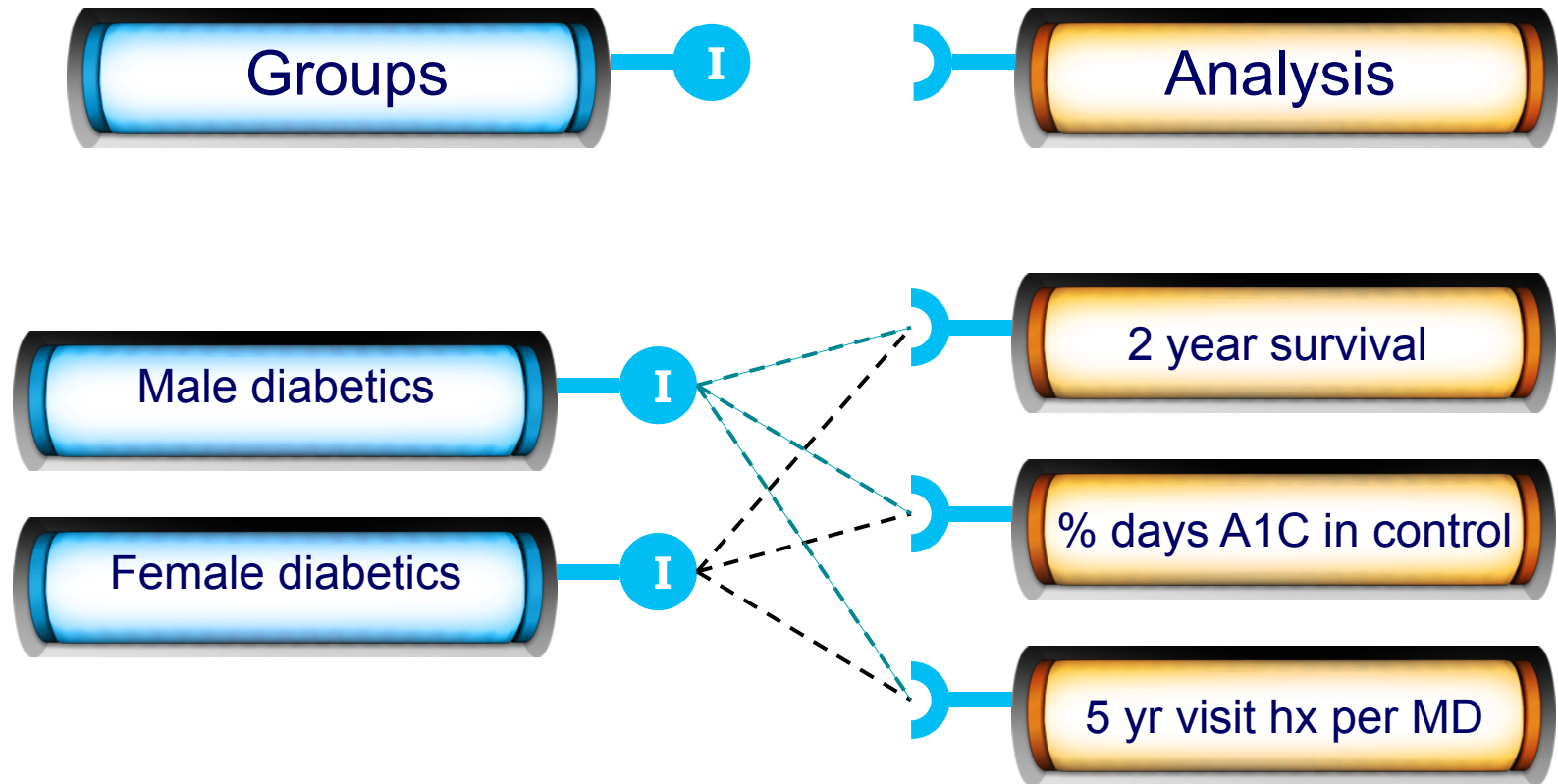
700 active users  
5K analysis/month

Resident Training  
CME at Montefiore

**EMERGING  
HEALTH**

MONTEFIORE INFORMATION TECHNOLOGY

# CLG Study

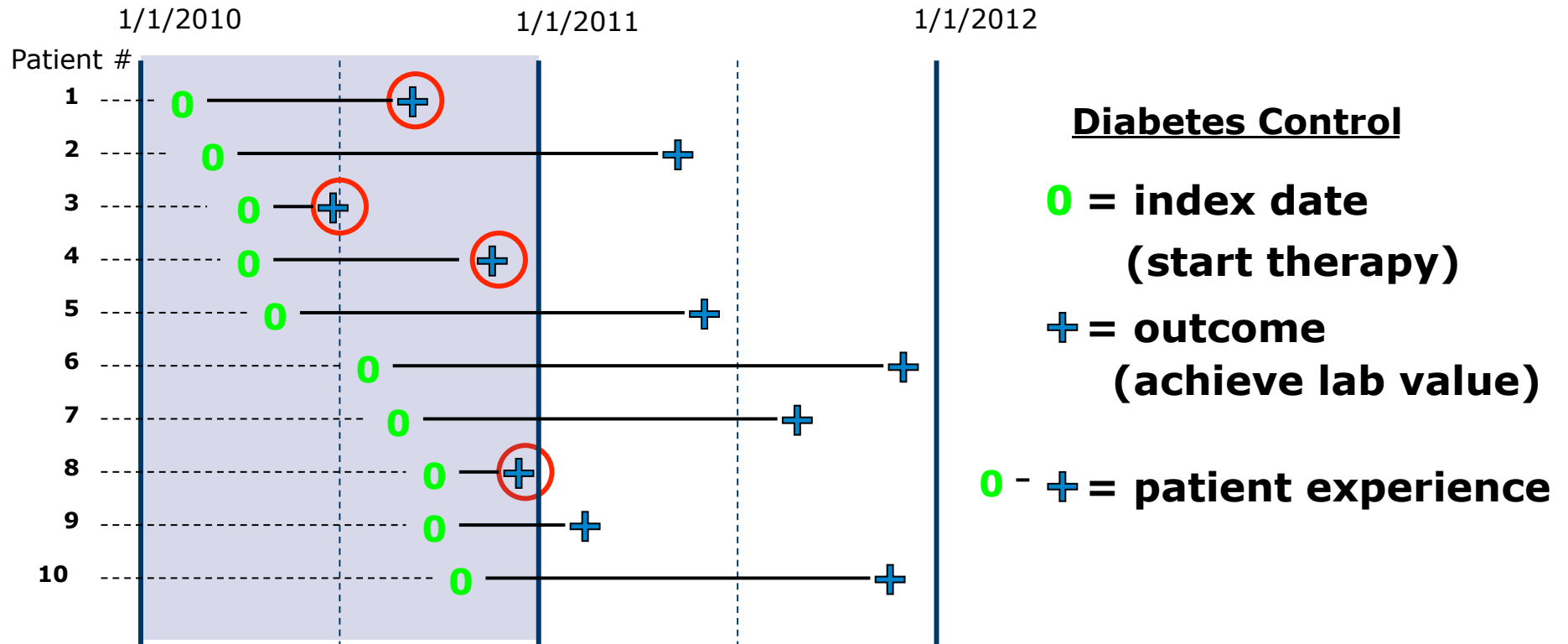


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EMERGING  
HEALTH

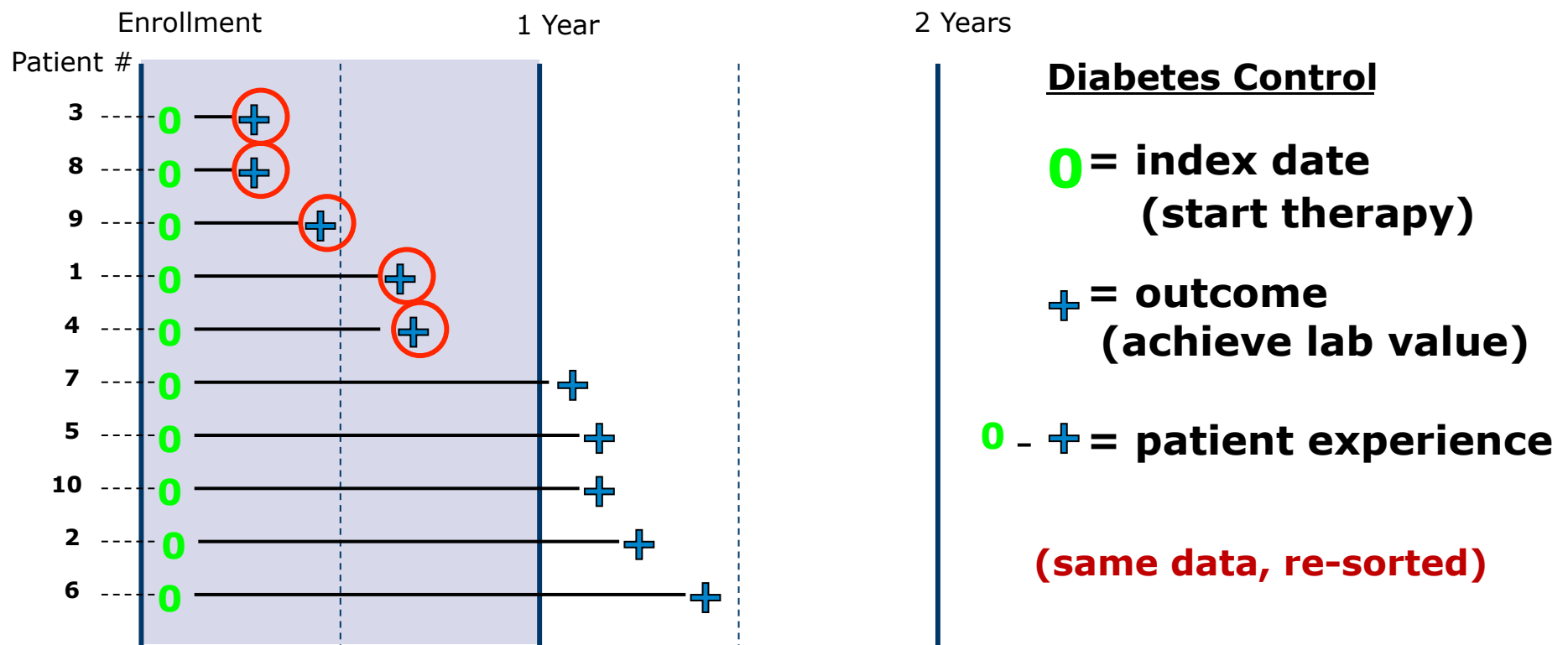
MONTEFIORE INFORMATION TECHNOLOGY

# Index date alignment



What % of new diabetic patients were controlled in the year 2010?  $4 / 10 = 40\%$

# Alignment: cohort study design



What % of new diabetic patients were controlled within 1 year?  $5 / 10 = 50\%$

# Recapitulate research in the Bronx

## Risk of Adverse Outcomes Associated With Concomitant Use of Clopidogrel and Proton Pump Inhibitors Following Acute Coronary Syndrome

P. Michael Ho, MD, PhD

Thomas M. Maddox, MD, MSc

Li Wang, MS

Stephan D. Fihn, MD, MPH

Robert L. Jesse, MD, PhD

Eric D. Peterson, MD, MPH

John S. Rumsfeld, MD, PhD

**T**REATMENT WITH CLOPIDOGREL in addition to aspirin reduces recurrent cardiovascular events following hospitalization for acute coronary syndrome (ACS) for patients treated either medically or with percutaneous coronary interven-

**Context** Prior mechanistic studies reported that omeprazole decreases the platelet inhibitory effects of clopidogrel, yet the clinical significance of these findings is not clear.

**Objective** To assess outcomes of patients taking clopidogrel with or without a proton pump inhibitor (PPI) after hospitalization for acute coronary syndrome (ACS).

**Design, Setting, and Patients** Retrospective cohort study of 8205 patients with ACS taking clopidogrel after discharge from 127 Veterans Affairs hospitals between October 1, 2003, and January 31, 2006. Vital status information was available for all patients through September 30, 2006.

**Main Outcome Measures** All-cause mortality or rehospitalization for ACS.

**Results** Of 8205 patients taking clopidogrel after discharge, 63.9% (n=5244) were prescribed PPI at discharge, during follow-up, or both and 36.1% (n=2961) were not prescribed PPI. Death or rehospitalization for ACS occurred in 20.8% (n=615) of patients taking clopidogrel without PPI and 29.8% (n=1561) of patients taking clopidogrel plus PPI. In multivariable analyses, use of clopidogrel plus PPI was associated with an increased risk of death or rehospitalization for ACS compared with use of clo-

# Demo

Studies, Cohorts, Outcomes	Concepts
Clopidogrel and PPI	Study Designer Multi-group comparison Statistics (Relative Risk, baseline) HIPAA challenge for PHI GROUPS: <ul style="list-style-type: none"><li>• Index Date Selection</li><li>• WITHIN operator</li><li>• Negation</li><li>• Event Definition</li></ul> PDF summary of study Sharing
Diabetes Cohort Unknown HIV Status	Abstract Event Logical Operators
ICU Pain Mgmt	WHEN IN system duration Event Collections



# Advanced temporal complexity

The screenshot shows the CLG Event Canvas interface. At the top, there is a header with the CLG logo and the text 'Event Canvas'. Below the header, there is a toolbar with buttons for 'Edit Selected', 'BUILD', 'Save As', and other icons. A text field contains the name 'Diabetics without Primary Care'. Below this, there is a section titled 'Event Canvas' containing a hierarchical tree of logical rules. The root rule is 'INDEX EVENT : [ Earliest of DiabetesDxDate (And) ]'. It branches into a group 'DiabetesDxDate: [ Earliest of Any (Or) ]', which further branches into three subgroups: 'Clinic: [ All of [ClinicDiab : ClinicVisitDate] WHEN IN [2005] ]', 'Lab: [ All of [LabA1Cgt8 : LabTestDate] WHEN IN [2005] ]', and 'Med: [ All of [DiabMedStart : PrescriptionStartDate] WHEN IN [2005] ]'. These three subgroups are connected by 'OR' operators. The main rule is connected to two other subgroups by 'AND' operators: 'SubseqClinic: [ NOT All of [Subsequent Clinic : ClinicVisitDate] within 0 to 365 Days After Grp: DiabetesDxDate ]' and 'Lab Follow up: [ All of [LabAnyA1C : LabTestDate] within 1 to 2 Years After Group: DiabetesDxDate ]'. The 'SubseqClinic' and 'Lab Follow up' subgroups are connected to the main rule by 'AND' operators.

- Logical subgroups
- AND/OR/NOT
- Temporal rules b/w events
- Anchor events in calendar time
- Group definition
- Outcome definition

# DISCUSSION

Ask me later about:

- **Time in Range (TIR) method**
  - Track lab or finding values over time
  - Interpolate between observations
  - Summarize time the value was in given quality ranges
- **Predictive Analytics Modeling**
  - Temporal requirements for data procurement
- **CLG Automation via API**

# More Info

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