Case 3: i2b2 and SHRINE
Adam Wright, PhD
RPDR / i2b2 at Partners HealthCare

Diagram:
- Epic
- LMR
- Billing
- PROMs

Flow:
Epic, LMR, Billing, PROMs -> RPDR / i2b2 -> Query Tool
Welcome to the RPDR Query Tool

The faculty sponsor for this work is Wright, Adam

ANNOUNCEMENTS

What's New: The Daily Query Tool is new functionality the RPDR has added for our users. Using the Daily Query Tool, you will be able to query those source systems which are updated on a daily basis. For more information and to launch the Daily Query Tool see the Query Tool Access information on the "RPDR Home Page"

What's New: The RPDR has added PROMs Data to the Query Tool. Look for these under the PROMs folder on the left side of the Query Tool. Build your query using Surveys by Organization or by the PROMIS-10 Survey Instrument. (More Survey Instruments coming soon!)

How current is RPDR data? The last monthly update was on

Log on
Query Name: Diabetes mellitus (E08-E13) on 05/23/2017

- Independent of Visit

**Group 1 of 3**
- Independent of Visit

**Group 2 of 3**
- Independent of Visit

**Group 3 of 3**
- Independent of Visit

The items in this group are joined together, and intersected with other groups.

- Diabetes mellitus (E08-E13)

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**Gender**
- Male: 29659
- Female: 936
- Other: 0

**Age**
- 15-24: 144
- 25-34: 150
- 35-44: 282
- 45-54: 210
- 55-64: 151
- 65-74: 140
- 75-84: 151
- 85+: 70

**Race**
- White: 26931
- Black: 3294
- Other: 0

**Vital**
- BP (systolic): 144.28 ± 3
- BP (diastolic): 93.31 ± 3
- HR: 86 ± 2
- Temperature: 98.6 ± 0.6
Query Name: Diabetes mellitus, Canagliflozin on 05/23/2017

- Group 1 of 3: Independent of Visit
  - Diabetes mellitus (E08-E13)
  - Canagliflozin

- Group 2 of 3: Independent of Visit
  - The items of this group are joined together, and intersected with other groups.

- Group 3 of 3: Independent of Visit
  - The items of this group are joined together, and intersected with other groups.
Query Name: Diabetes m.... Canagliflozin PROMIS on 05/23/2017

Group 1 of 3
- Independent of Visit

Group 2 of 3
- Independent of Visit

Group 3 of 3
- Independent of Visit

The items of this group are joined together, and intersected with other groups.

- Diabetes mellitus (E08-E13)
- Canagliflozin

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PROMIS

Run Query

Total count: 90±3 patients

Gender
- Male: 39±5
- Female: 51±4

Age
- 0-6: 6±2
- 6-18: 6±2
- 18-29: 8±2
- 30-39: 4±2
- 40-49: 4±2
- 50-59: 3±2
- 60-69: 1±2
- 70+: 1±1

Race
- White: 66±2
- Black: 4±2
- Asian: 4±2
- Latin: 2±2

Vital
Shrine Announcements

Shared Health Research Informatics Network (SHRINE) Terms-of-Data-Access Agreement

This Terms-of-Data-Access Agreement is designed to permit approved users access to the SHRINE federated query tool for the purpose of requesting aggregate clinical data from participating Harvard Catalyst Clinical and Translational Science Center organizations who are members of the SHRINE network ("Participating SHRINE Organization"). As of October 1, 2009, the Participating SHRINE Organizations are: Beth Israel Deaconess Medical Center, Brigham and Women's Hospital, Children's Hospital Boston, and Massachusetts General Hospital. Each Organization individually contributes and allows access to aggregate clinical data for research purposes only. Your signature certifies that you understand and agree to all applicable terms contained herein.

1. I assert that I am a member of the Harvard Medical School Faculty appointed at or above the instructor level and am employed by a Participating SHRINE Organization (or that organization’s Physician’s Organization) ("Qualified Faculty Member").
2. I understand that access to SHRINE is currently limited to Qualified Faculty Members of Participating SHRINE Organizations (as defined above).
3. I understand that I may collaborate with investigators who are not Qualified Faculty Members under the following conditions:
   a. My collaborator is appointed at or above the Instructor level at Harvard University and is employed at Harvard University.
   b. Our collaboration must be in my area of scientific expertise.
   c. I am the only individual who will be authorized to conduct actual queries.
   d. I assume full responsibility for adherence by my collaborator with the SHRINE Business Rules and will obtain and retain a signed copy of this Terms-of-Access Agreement to certify my collaborator’s compliance with the SHRINE Business Rules.
4. I understand that collaboration and/or sharing of primary data with other investigators is subject to review by a committee of independent scholars.

[Buttons: Yes, I agree | No, I disagree]
Finished Query: "Diabe-Metform@13:46:17"

Compute Time: 85.2 secs

Patient Count: 1332 +/- 3 patients

Patient Age Count Breakdown:
- 0-9 years old: 10 patients or fewer
- 10-17 years old: 10 patients or fewer
- 18-34 years old: 10 patients or fewer
- 35-44 years old: 21 +/- 3 patients
- 45-54 years old: 122 +/- 3 patients
- 55-64 years old: 327 +/- 3 patients
- 65-74 years old: 485 +/- 3 patients
- 75-84 years old: 300 +/- 3 patients
- >= 85 years old: 60 +/- 3 patients

Patient Gender Count Breakdown:
- Female: 659 +/- 3 patients
- Male: 673 +/- 3 patients
- Unknown: 10 patients or fewer

Patient Race Count Breakdown:
- Am Ind Or Alaska Native/White: 10 patients or fewer
- American Indian or Alaska Native: 35 +/- 3 patients
- Asia/Net Hawaii Oth Pac Isl: 10 patients or fewer
- Asian: 165 +/- 3 patients
- Asian/Amer Ind Or Alaska Nat: 10 patients or fewer
- Asian/White: 10 patients or fewer
- Black or African American: 757 +/- 3 patients
- Black/Asian: 10 patients or fewer
- Black/White: 88 +/- 3 patients
- Blk/Am ind Or Alaska Native: 10 patients or fewer
- Blk/Net Hawaii Oth Pac Isl: 10 patients or fewer
- Hispanic or Latino: 207 +/- 3 patients
- Nat Hawaii Oth Pac Isl/Whit: 10 patients or fewer
- Native Hawaiian or Other Pacific Islander: 45 +/- 3 patients
- Not Hispanic or Latino: 10 patients or fewer
- Unknown Ethnicity: 18 +/- 3 patients
- Unknown Race: 18 +/- 3 patients
Model summary

• I2b2 is a system for research data warehousing and self-service querying by researchers
• SHRINE is a federated query system, which allows users to query multiple i2b2 instances without needing to move data
• SHRINE requires harmonization of data model and semantics
• Could be a model for sharing PROMs
i2b2 / SHRINE creators

• Harvard
  • Shawn Murphy
  • Zak Kohane
  • Griffin Weber
  • Andrew McMurry
  • Douglas MacFadden
  • Dan Nigrin
  • Susanne Churchill

• The community of international i2b2 and SHRINE collaborators