Putting Claims Data to Work

Exploring Patient Attribution Using Utah's APCD and Inpatient Discharge Data

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Mandated Quality Comparisons

The Utah Department of Health, Office of Health Care Statistics is required to publish quality comparisons with identified clinics (5+ physicians) and aggregate small clinics by geography.

- In 2014, the Office published geographic comparisons of five quality measures.
- In 2016, the Office published clinic comparisons of two of the five quality measures.

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Quality Measures for 2016

Comprehensive Diabetes Care: Hemoglobin A1c (HbA1c) Testing
- NQF #0057
- The percentage of patients 18-75 years of age with diabetes (type 1 and type 2) who received an HbA1c test during the measurement year.

Avoidance of Antibiotic Treatment for Adults with Acute Bronchitis
- NQF #0058
- The percentage of adults 18–64 years of age with a diagnosis of acute bronchitis who were not dispensed an antibiotic prescription.

Attributing Patients to Clinics

Who is the patient's primary care provider?

Here's the catch: identifying health care providers (e.g. hospitals, clinics, and physicians) in an APCD is challenging.

Knowing this, we planned a third-party audit of our attribution methods.

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Attributing Patients to Clinics

We developed different attribution methods for each measure

- HbA1c patients attributed to all providers visited during the reporting period.
- AAB patients attributed to the clinic where bronchitis was diagnosed.

Attribution relies heavily on National Provider ID (NPI) in APCD linked to additional data in the National Plan and Provider Enumeration System (NPPES) NPI Registry.

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HbA1c Screening – Two Attribution Methods

Clinic name	Method 1* Patient seen at clinic	Method 2** Patient seen at clinic	Method 1* Dx match	Method 2** Dx match
Memorial Clinic	100%	100%	79%	100%
Logan Clinic	100%	100%	90%	95%
Salt Lake Clinic	100%	100%	40%	95%
Wayne	100%	86%	100%	83%
Herefordshire	100%	100%	69%	95%
Redwood	50%	N/A	7%	24%
Granger	100%	100%	50%	75%

*   Names compared to registry/report run by clinic / OHCS attributes patients regardless of provider specialty
** Chart review of random sample of 20 patients / OHCS limits attribution to PCP specialties – excludes urgent care visits

Method 2 details

| Diabetes HbA1c Screening (adult) – PCP only attribution method			
Clinic name	Patient seen at clinic	Dx match	Procedure/Rx match
Memorial Clinic	20/20 100%	20/20 100%	18/20 90%
Logan Clinic	20/20 100%	19/20 95%	19/19 100%
Salt Lake Clinic	20/20 100%	18/19 95%	15/18 83%
Herefordshire	20/20 100%	19/20 95%	18/20 90%
Wayne	6/7 86%	5/6 83%	4/5 80%
Redwood	N/A	52/684 8% *	N/A
Granger	20/20 100%	11/20 55% **	11/11 100%

Method 2 details

## Antibiotic Avoidance in Adult Patients with Acute Bronchitis

| Clinic name	Patient seen at clinic		Dx match		Procedure/Rx match	
Memorial Clinic	19/20	95%	15/19	79%	11/15	73%
Logan Clinic	18/18	100%	18/18	100%	11/18	61%
Salt Lake Clinic	21/21	100%	18/21	86%	14/18	78%
Herefordshire	19/20	95%	18/19	95%	17/18	95%
Wayne (Escalante and Bicknell)	4/4	100%	2/4	50%	1/2	50%
Redwood	N/A		102/419	24% *	N/A	
Granger	20/20	100%	15/20	75% **	10/15	67%

Correlation of Clinic and APCD Rates
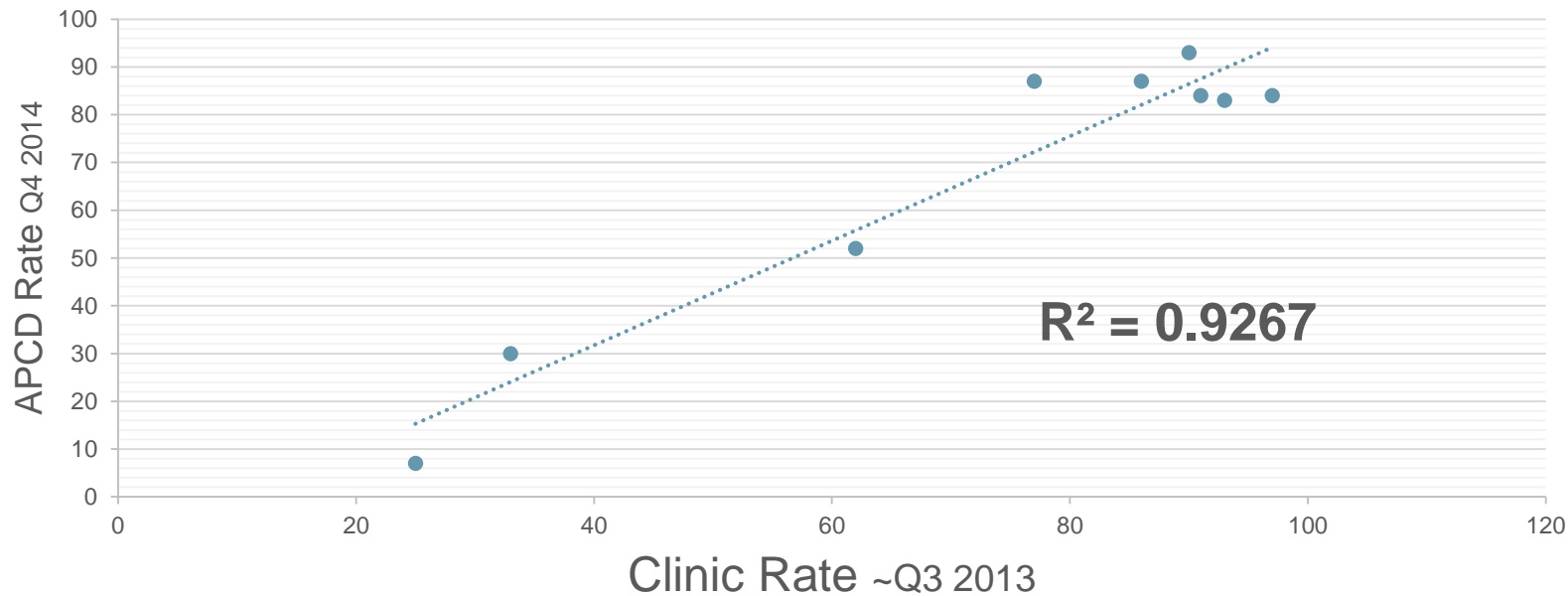
Correlation of APCD to Clinic Scores – with Additional Beacon and HealthInsight Physician Office Quality Award Application Scores
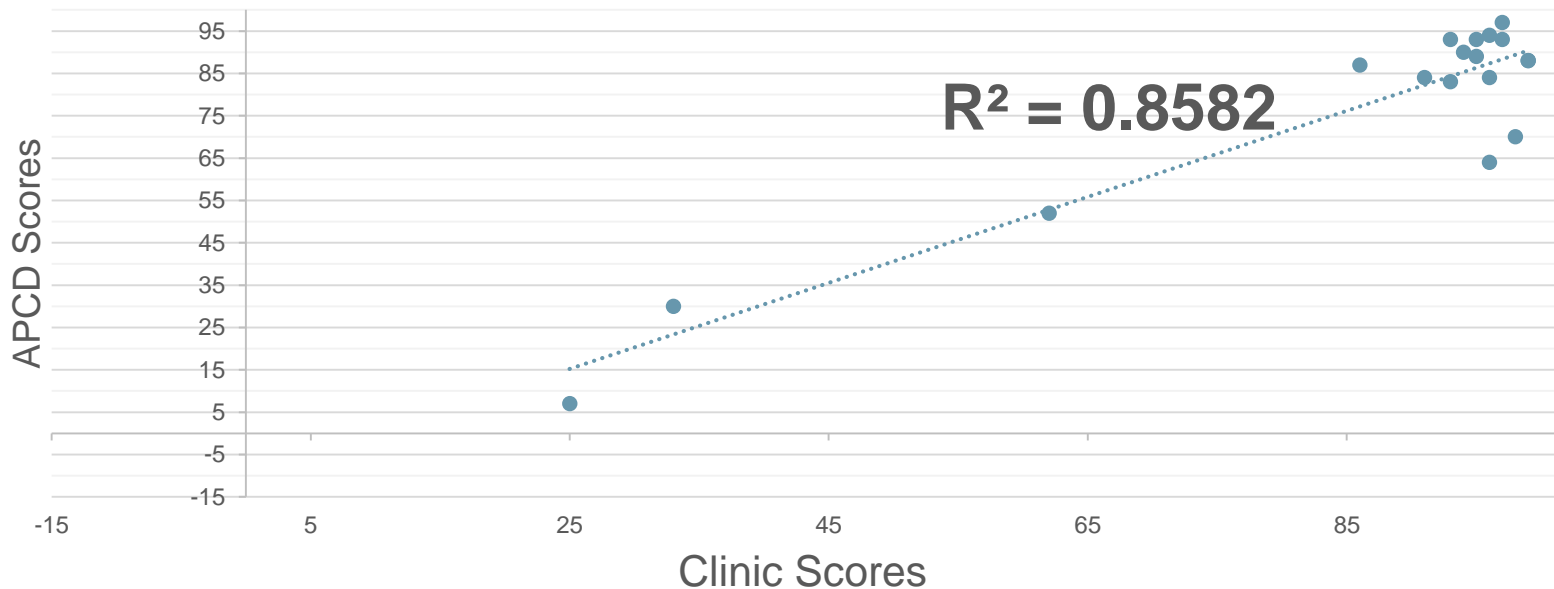
Bland – Altman plot: A Scatterplot of the Average of Two Methods by the Difference of the Two Method's Scores – with 'Limits of Agreement'
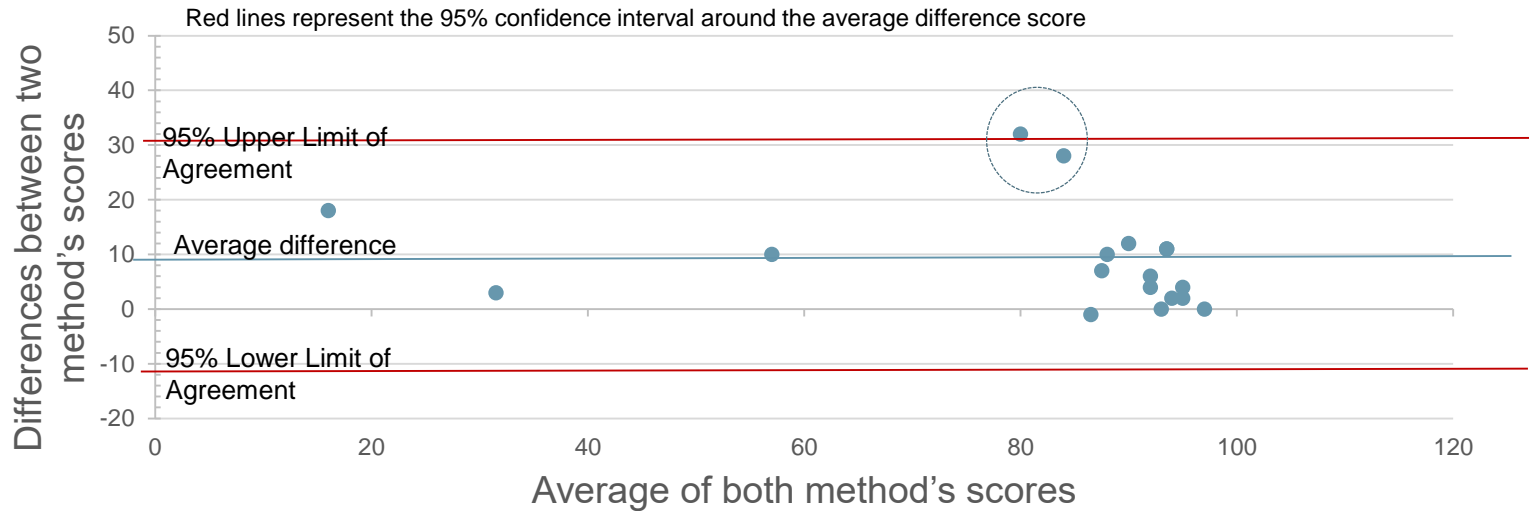
This approach helps determine if the correlated scores are actually in agreement. Note that method A's scores could be double the value of method B's scores and the correlation would remain the same – but there would be no agreement. Look for scores clustered around the average and within the limits of agreement.

Maternity Cost Comparisons

Collaboration between Utah Department of Health and HealthInsight Utah.

Consumer focus groups revealed interest in maternity cost and guidance committee selected maternity as a topic for development.

So, "How much does it cost to have a baby?"

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Defining Maternity and Neonate Cost

We used allowed amounts on claims with the following 3M APR-DRGs to determine cost for mom and baby's hospital stay:

- Maternity
    - 540 - Cesarean Delivery
    - 560 - Vaginal Delivery
- Neonate
    - 626 - Neonate Birthweight 20002499g, Normal Newborn or Neonate w Other Problem
    - 640 - Neonate Birthweight >2499g, Normal Newborn or Neonate w Other Problem

Hospital Discharge Data for Patient Attribution

Same question as clinic attribution but different solutions are available.

Which mothers delivered baby at this hospital?

The hospitals would know. Why not just link the APCD and inpatient data using common data elements?

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Hospital Discharge Data for Patient Attribution

1. Claim and inpatient discharge records must have matching birthdate, service date, APR-DRG and at least one of the claim or inpatient discharge record must have a valid entry for SSN, then:

   a. Claim and inpatient discharge records must have matching patient last 4 digits of Social Security Numbers, or

   b. Charge amounts must match exactly, or

   c. Zip codes must match exactly, or

   d. Patient first and last name must match exactly, or

   e. The primary diagnosis and principal procedures must match exactly.

Applying this logic resulted in attributing 24,234 of the 27,659 deliveries (87.62%) of identified in the APCD to a hospital.

Hospital Discharge Data for Patient Attribution

Neonates are attributed to the same hospital as the mother because it seems unlikely that a baby was born somewhere other than where mom was admitted.

Applying this logic resulted in attributing 14,064 of the 17,403 neonates (80.81%) identified in the APCD to a hospital.

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Providers' Data Review

Clinics and hospitals were given an opportunity to review their respective quality and cost data prior to publication.

1. The Office submitted background information, methodology, results, and review process documentation and contact information to the providers.
2. Providers were given time to review information and request raw data:
   a. Hospitals were given a week.
   b. Clinics were given seven weeks.
3. The Office was allowed one week to provide raw data files to requestors before the official 15 business day review period began.
4. Data were published at least one week after comment period ended.

Website(s)/Contact Info

Clinic quality comparisons on opendata.utah.gov.
-Methodology is in the "About" section of the data table (.pdf file).

Maternity cost comparisons on utahhealthscape.org.

Grant detail: *CMS Grants to States to Support Health Insurance Rate Review and Increase Transparency in Health Care Pricing, Cycle III* [Grant Number: 1 PRPPR140059-01- 00].

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