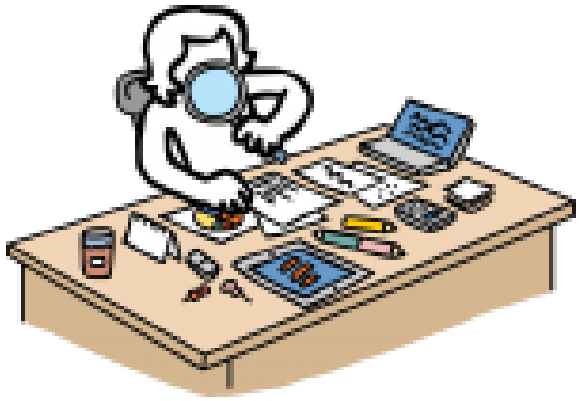
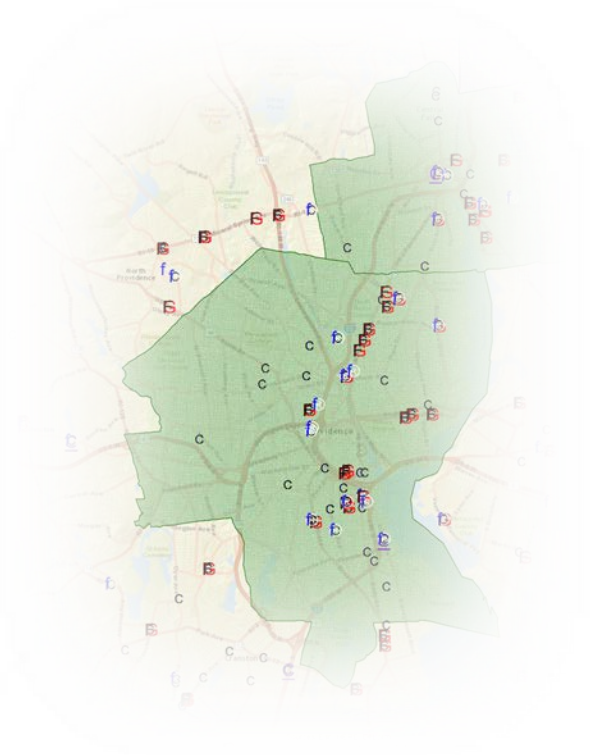
Using Medicaid Claims Data to Calculate Capacity for Federally Designated Shortage Areas



May 24, 2017

PART 1



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John Snow, Inc.

Promoting and Improving Health

Training Goals

- Consider the benefits and pitfalls of using Medicaid claims data for capacity analysis
- Understand how best to obtain Medicaid claims data and what to request
- Learn how to process the claims data obtained for designation capacity purposes
- Highlight issues equating claims to SDMS records
- Discuss other potential uses of the data for access analysis

Claims-Based Capacity Analysis

- Concept: Visit count/year = FTE
  - Physician/Dentist claims only
- Only officially allowed for Medicaid
  - PC = 5000 claims per FTE
  - Dental/Psych = 4000 claims per FTE
- Claim definition/extract/analysis process for designation not defined in regulation or policy
- Process/Contents vary state-to-state
  - Accessibility of data / restrictions
  - Methods of sharing/querying
  - Claim content / detail

Claims Analysis Process Overview

- Define data request / content
- Connect claims to other data sets
  - NPI records
  - License data if possible
- Classify claims
  - Primary Care vs Specialty visits
  - Individual vs Organizational billing
- Connect claims counts to SDMS records
  - Individual NPI, Address
  - Allocation of organizational claims to individuals

Advantages of Claims Based Capacity

- Statewide analysis
  - Including participating providers in neighboring states
- High ratio vs average productivity produces lower FTE for claims vs hours
  - 3500/5000 ≈ 0.7 FTE for PC
- 'Easier' and likely more accurate than survey
- Regular updates
- Automatically accounts for other factors
  - Age, hours/leave/vacation, dental auxiliaries, etc.

Caveats for Claims Based Capacity

- Retrospective assessment (1+ years old)
- Need to assure complete content
  - Especially regarding MCO claims
- Issues with 'organization-level' billing
  - Connection to individual NPI's for SDMS
  - Sufficient address/service differentiation in NPI
  - Inability to directly differentiate/remove specialist and/or non-physician claims, NHSC, etc.
  - Bundled claim codes

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Obtaining Claims Data

DO NOT JUST ASK MEDICAID FOR A COUNT OF CLAIMS!

- Discuss with Medicaid:
  - Data dictionary, Data vendor
  - Data use agreements, etc. needed
- Best to not ask for just PC specialties (can flag)
- Different means of access:
  - Record level claims transfer (large file)
  - Live query access (may require query expertise)
  - Summarized data request (simple, risky)
    - Need NPI and address level summary at minimum

Defining the Claims Extract

- Timeframe: Any 12 month period
  - Wait 4-6 months for claims to 'settle'
- Visits defined by CPT codes
  - Codes that would be billed once at each visit
- Outputs needed
  - NPI# (of attending/rendering provider vs billing if available)
  - Service delivery address
  - Provider/Org Name
  - Count of Claims (if pre-aggregated)
  - Optional:
    - Any internal data on provider specialty, care setting, or ID's/addresses below NPI address level
    - Patient zip Code (for origin/destination study - discussed later)
    - CPT code billed

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CPT Code Specifications

- Primary Care:
  - Evaluation & Management
    - New Patient: 99201-99205
    - Established Patient; 99211-99215
  - Preventive Medicine
    - New Patient: 99381-99387
    - Established Patient: 99391-99397
  - HCPCS T1015: FQHC all-inclusive

CPT Code Specifications

- Dental:
  - Oral Evaluation: D0120-D0180
  - Prophylaxis: D1110 – D1120
- Psychiatry: *(Now directly usable for capacity)*
  - Psychiatric Diagnosis: 90791-90792
  - Psychotherapy: 90832-90853
  - Now also use Med E&M Codes (99201-99215) with modifier
  - ➢ Note: Major Psych CPT changes in 2013

Analysis of Extracted Claims

- Need to separate out non-PC, non-physician claims and organizational billing
- Connect to full NPI file listing for providers
  - SDMS won't have organizations and some individuals
  - Large File – open in SAS, SPSS, etc. and create subset based on all NPI#'s in claims extract
  - Eliminate other ID fields, etc. to reduce size
- Develop classifications of claims:
  - PC Only, Individual
  - PC Only, Org
  - PC Mixed, Org
  - *Option: PC Mixed, Individual*

The National Provider Identifier (NPI)

- Full file publicly available from CMS
  - http://download.cms.gov/nppes/NPI_Files.html
  - Full File and weekly updates (delta file)
  - Provider Lookup: https://npiregistry.cms.hhs.gov/
- NPI# - 10 digit unique ID
  - Type 1 – Individual providers
  - Type 2 – Organizations / Sub-parts
- Taxonomy Codes (up to 15)
  - Code (*see http://www.wpc-edi.com/reference/*)
  - Associated License# & State (optional)
  - 'Primary' flag (optional)

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Taxonomy Classifications

Primary Care		
Type	**Code**	**Specialty Desc**
Individual	207Q00000X	Family Medicine
Individual	208D00000X	General Practice
Individual	207R00000X	Internal Medicine
Individual	207RA0000X	Adolescent Medicine
Individual	207RG0300X	Geriatric Medicine
Individual	207V00000X	Obstetrics & Gynecology
Individual	207VG0400X	Gynecology
Individual	208000000X	Pediatrics
Individual	2080A0000X	Adolescent Medicine
Individual	207QG0300X	Geriatric Medicine
Individual	207QA0000X	Adolescent Medicine
Individual	207QA0505X	Adult Medicine
Org	251K00000X	Public Health or Welfare
Org	261Q00000X	Clinic/Center
Org	261QC1500X	Community Health
Org	261QF0400X	Federally Qualified Health Center (FQHC)
Org	261QM1000X	Migrant Health
Org	261QM1300X	Multi-Specialty
Org	261QP0904X	Public Health, Federal
Org	261QP0905X	Public Health, State or Local
Org	261QP2300X	Primary Care
Org	261QR1300X	Rural Health

Taxonomy Classifications

Dental		
Type	**Code**	**Specialty Desc**
Individual	1223G0001X	General Practice
Individual	1223D0001X	Dental Public Health
Individual	122300000X	Dentist
Individual	1223P0221X	Pediatric Dentistry
Org	261QP0905X	Public Health, State or Local
Org	251K00000X	Public Health or Welfare
Org	261Q00000X	Clinic/Center
Org	261QC1500X	Community Health
Org	261QF0400X	Federally Qualified Health Center (FQHC)
Org	261QM1000X	Migrant Health
Org	261QP0904X	Public Health, Federal
Org	261QP2300X	Primary Care
Org	261QR1300X	Rural Health
Org	261QD0000X	Dental
Org	261QM1300X	Multi-Specialty

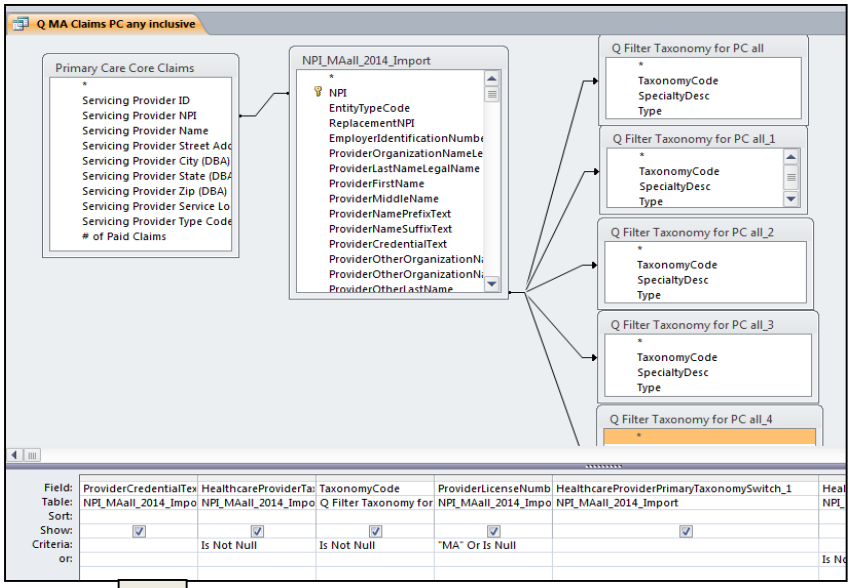
390200000X	Student in an Organized Health Care Education/Training Program

Psychiatry		
Type	**Code**	**Specialty Desc**
IndPhys	2084P0805X	Geriatric Psychiatry
IndPhys	2084P0804X	Child & Adolescent Psychiatry
IndPhys	2084P0800X	Psychiatry
Org	261QP2300X	Primary Care
Org	251K00000X	Public Health or Welfare
Org	261Q00000X	Clinic/Center
Org	261QC1500X	Community Health
Org	261QF0400X	Federally Qualified Health Center (FQHC)
Org	261QM1000X	Migrant Health
Org	261QM1300X	Multi-Specialty
Org	261QP0905X	Public Health, State or Local
Org	251S00000X	Community/Behavioral Health
Org	261QR1300X	Rural Health
Org	261QM0801X	Mental Health (Including Community Mental Health Center)
Org	261QM0850X	Adult Mental Health
Org	261QM0855X	Adolescent and Children Mental Health
Org	261QP0904X	Public Health, Federal

Analytic Steps Using Taxonomy and Type

1. Select claims with NPI having any matching PC taxonomies *(PC inclusive)*
2. Separate into Individual vs Organizational
3. Select claims with NPI having any that do not match PC Taxonomies *(Non-PC inclusive)*
   - May limit to those matching your state or with no state

- Claims by providers with both PC and Non-PC taxonomies classified as 'Mixed' – require additional follow up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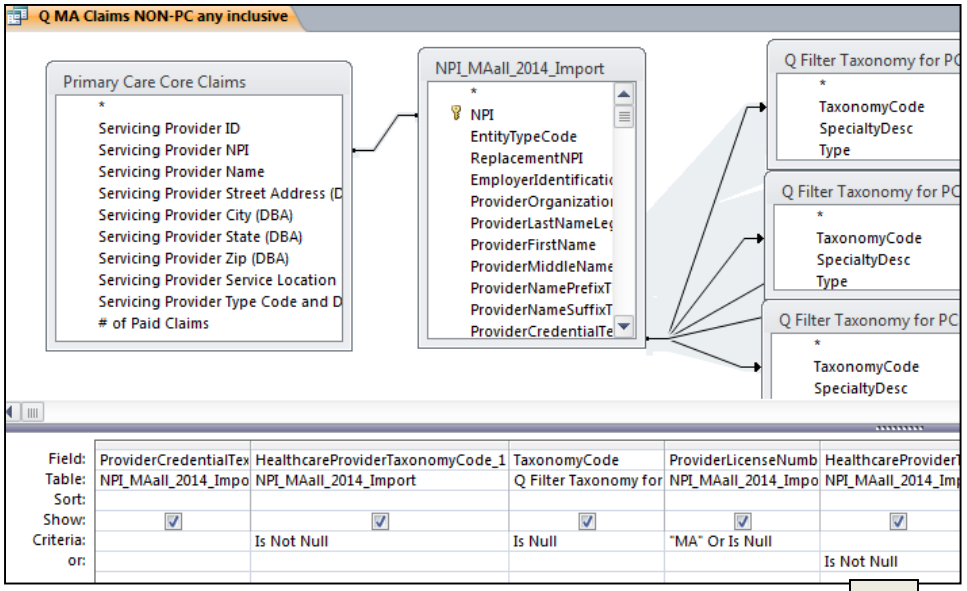
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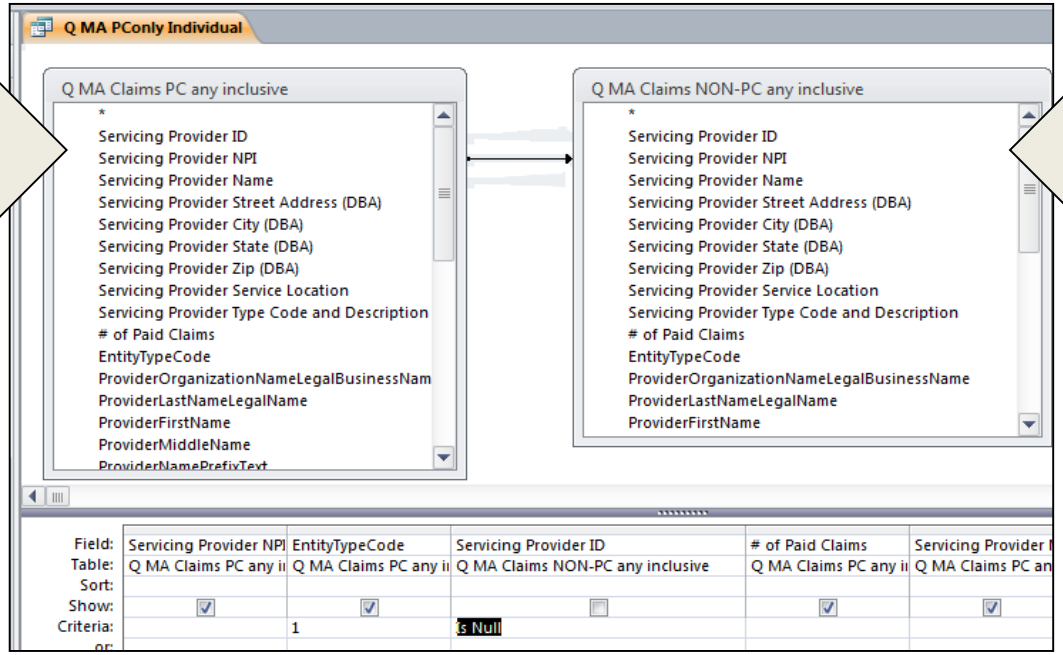
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Servicing Provider Zip (DBA)
Servicing Provider Service Location
Servicing Provider Type Code and Description
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ProviderLastNameLegalName
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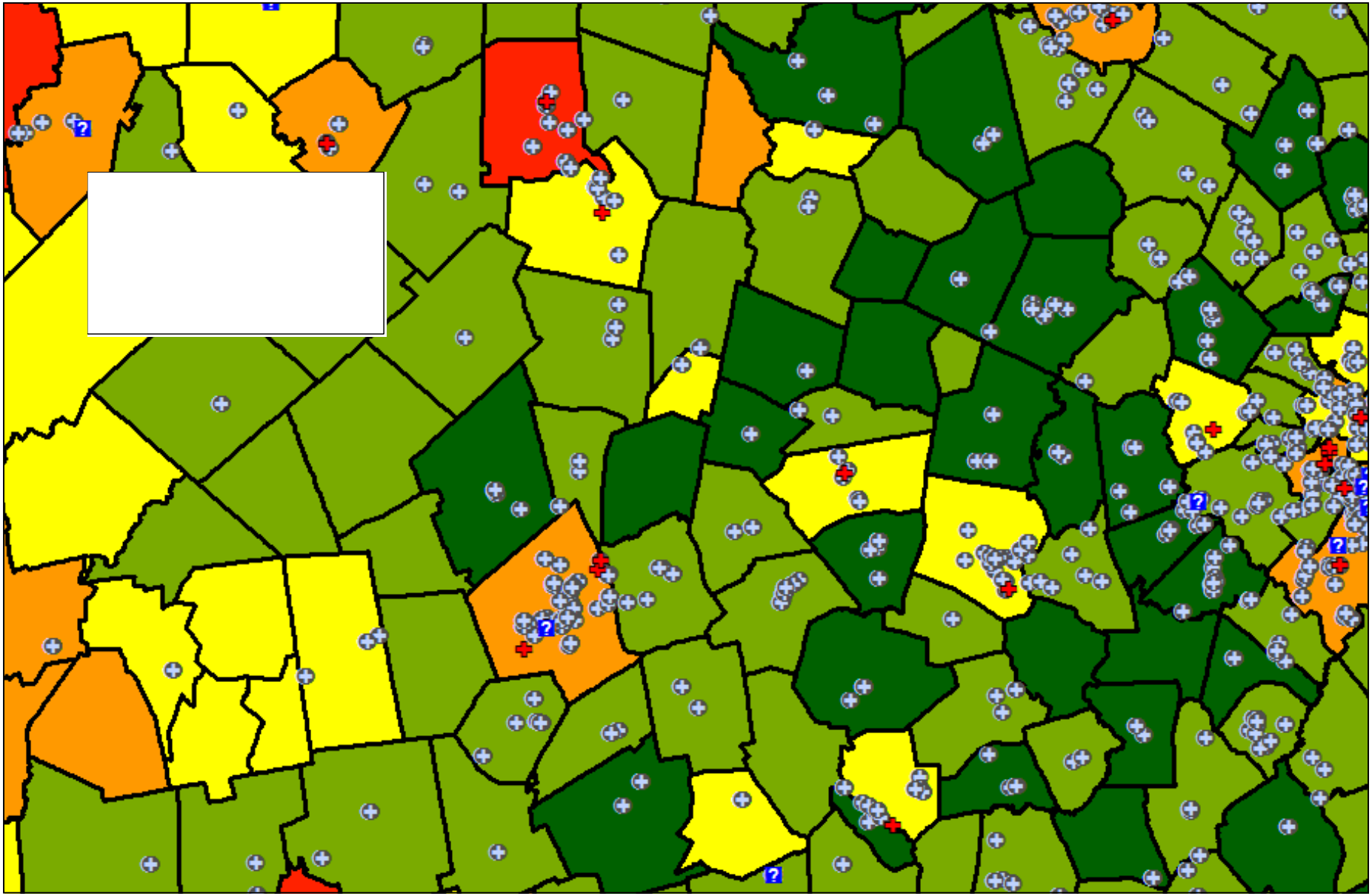
or:

Assigning Claims to SDMS Records

- Match on NPI# and service address
- All Organizational-level PC claims need to be assigned/allocated to individual provider NPI#'s
  - Use co-location (geocoding helpful)
  - Can match to license location or individual claims
- Make sure tour hours exist at location where claims are generated
- Some valid providers may no longer have an active NPI at time of analysis
- Still need to get Sliding Fee % for low income



Integrity Checks

- Test results to look for underlying issues
  - Compare total PC visits to Medicaid enrollees (or member years ideally) for same period: Is visit rate reasonable?
  - Look at locations with highest counts: Assure site is not a billing office/service (Google)
  - Compare to recent low income HPSA survey: Are providers similar?
  - Check if providers appear at multiple addresses: Some should

Claims Data Analysis – Other Uses/Approaches

Additional Access Analysis Challenges

- Define objective service areas
  - Test strength/porosity of service area boundaries
- Identify pockets of need within service areas
- Compare access to care for different segments of the population
- Examine better metrics of need compared to Population:Provider ratio
- Look for evidence of impacts from poor access

Claims Origin-Destination Matrix

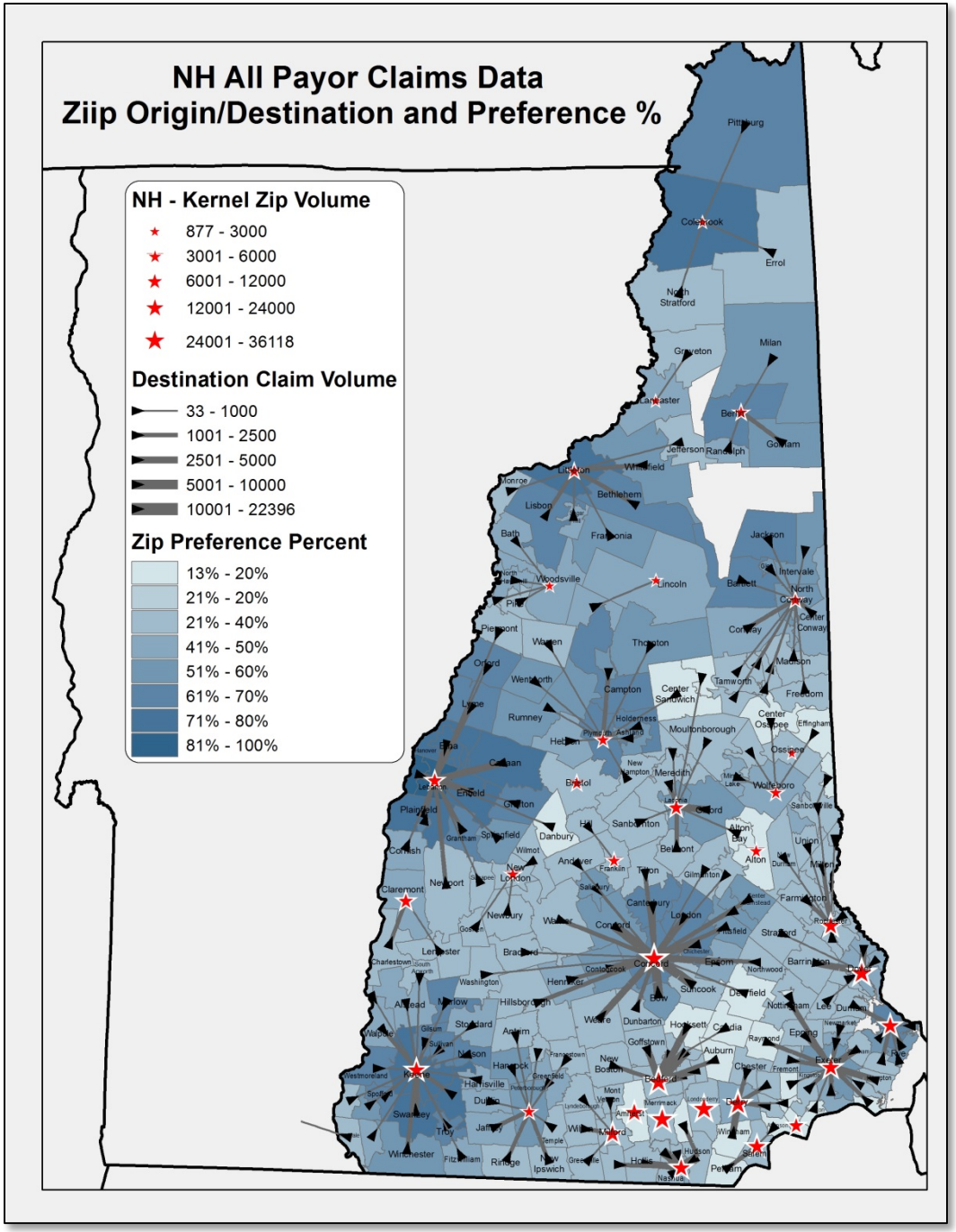
- Claim counts by 5-digit zip code combinations
  - Origin = Patient Zip Code
  - Destination = Provider Zip Code

Origin_Zip	Destination_Zi	Claims	Total Origin Claim	% Preferre
01001	01107	1410	3196	44.1%
01001	01001	265	3196	8.3%
01001	01089	243	3196	7.6%
01001	01085	182	3196	5.7%
01001	01103	168	3196	5.3%
01001	01109	147	3196	4.6%

- Preferred destination, average travel time, fractional visits exceeding desired time/distance, visits/patient, visits/enrollee

Map Result

- Kernel Zip Codes
  - Plurality O/D in same zip
  - Size = Volume
- Primary Destinations
  - Plurality of claims
  - Line Width = volume
  - Arrow = direction
- Preference %
  - Portion of claims to primary dest.



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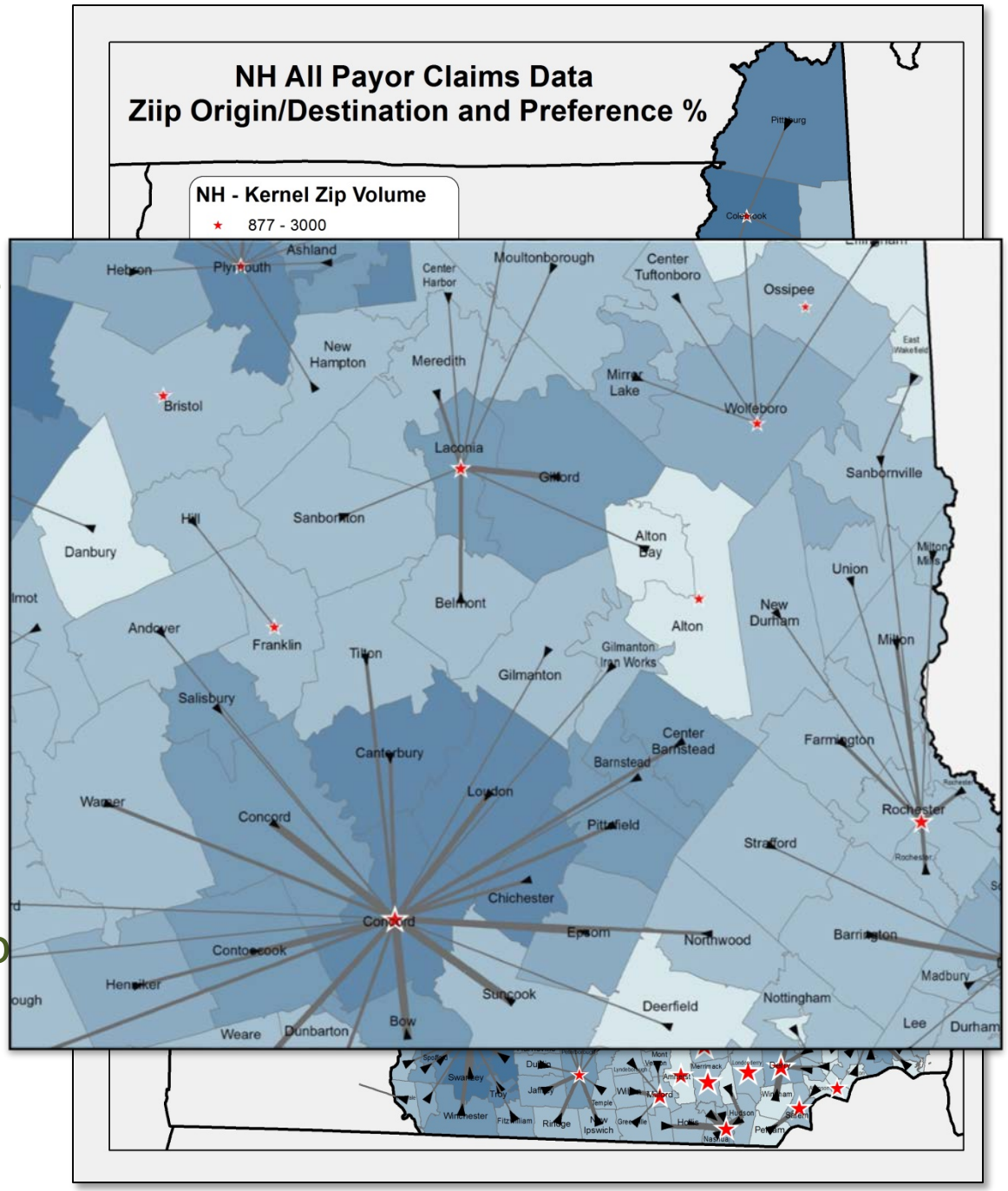

Further Potential for Claims O/D Analysis

- Examine Differential Access Patterns:
  - By Insurance Type or Plan/Network (APCD)
  - Stratify by age, other characteristics
  - Diagnosis-specific claim markers
- Service-Specific Access:
  - Mammography, Dialysis, any service with clear billing codes
- Provider Adequacy:
  - Overlay with base population (Pop/Provider ratio)
  - Identify where accessibility affects utilization

Questions / Discussion?

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