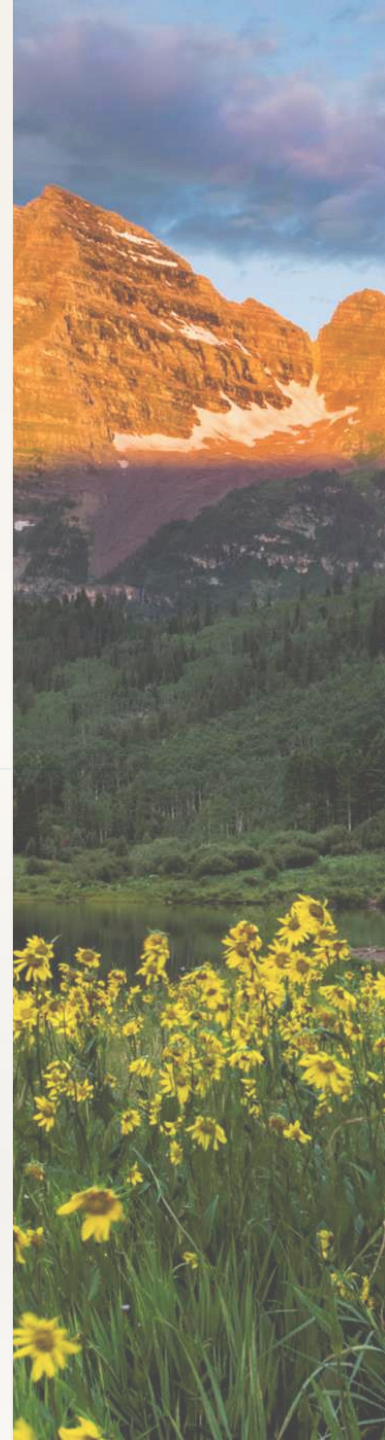


Colorado Health Systems Directory Overview

design, implementation and development goals



COLORADO
Department of Public
Health & Environment



Provider Directory Issues

California Regulator Slams Health Insurers Over Faulty Doctor Lists

Insurers' Flawed Directories Leave Patients Scrambling For In-Network Doctors

Inaccurate Provider Lists A Major Barrier To Care, Study Finds

Provider Directory Accuracy Issues Persist for Medicare Advantage

CMS questioned the provider directory accuracy for nearly 49 percent of the locations listed online by Medicare Advantage Organizations.

- >25% of provider contact information changes each year (LexisNexis 2014)

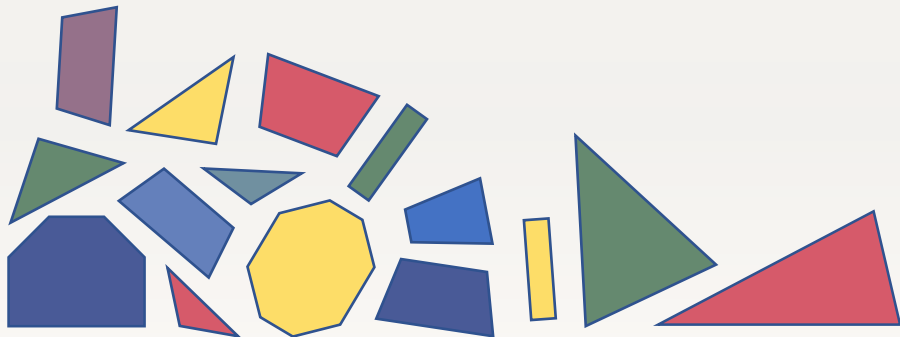
- 2.5% of provider demographics change per month (Enclarity, 2016)

- 30% of provider affiliates change per year (LexisNexis 2014)



Directory Strategy

Identify, standardize, restructure, compile, evaluate, and enhance publicly available and publicly created confidential data sets to form a “mosaic” profile of clinicians and health care systems.





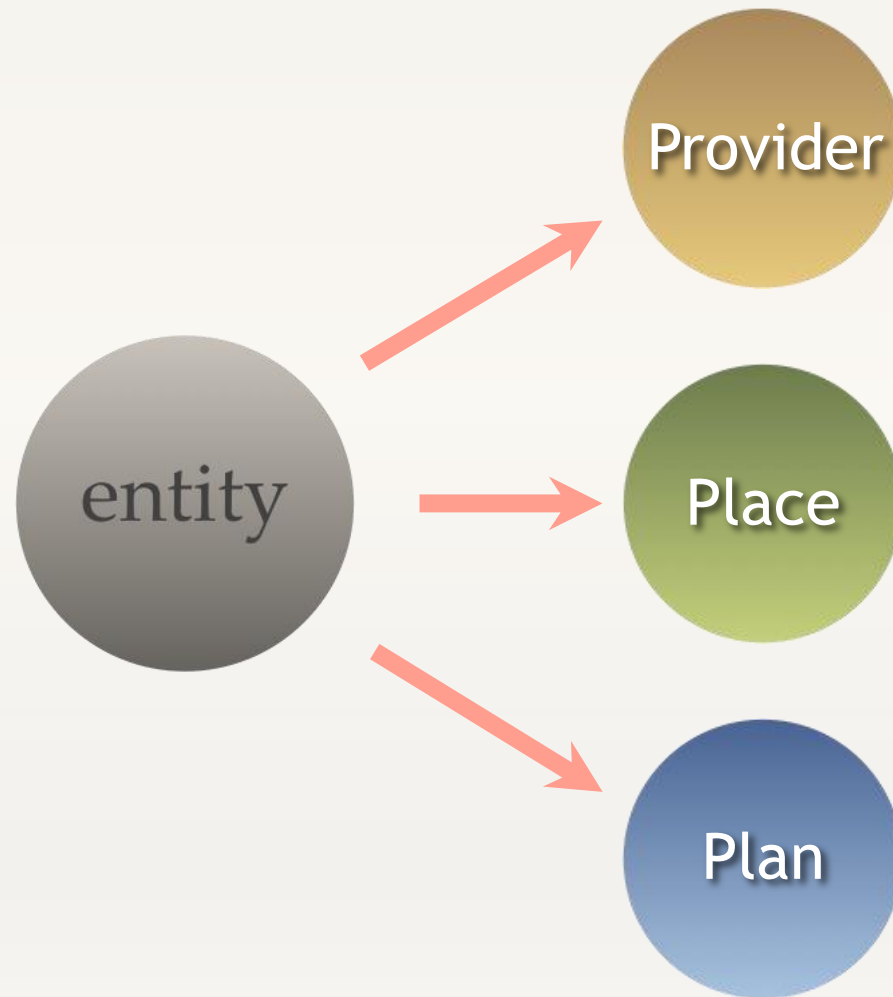
Challenges w/ Sources

- **Poorly structured data**
- **Non-standardized data**
- **Incomplete data**
- **Update frequency insufficient to maintain accuracy**
- **Designed for discrete use cases rather than general use cases**
- **Not designed for data exchange**

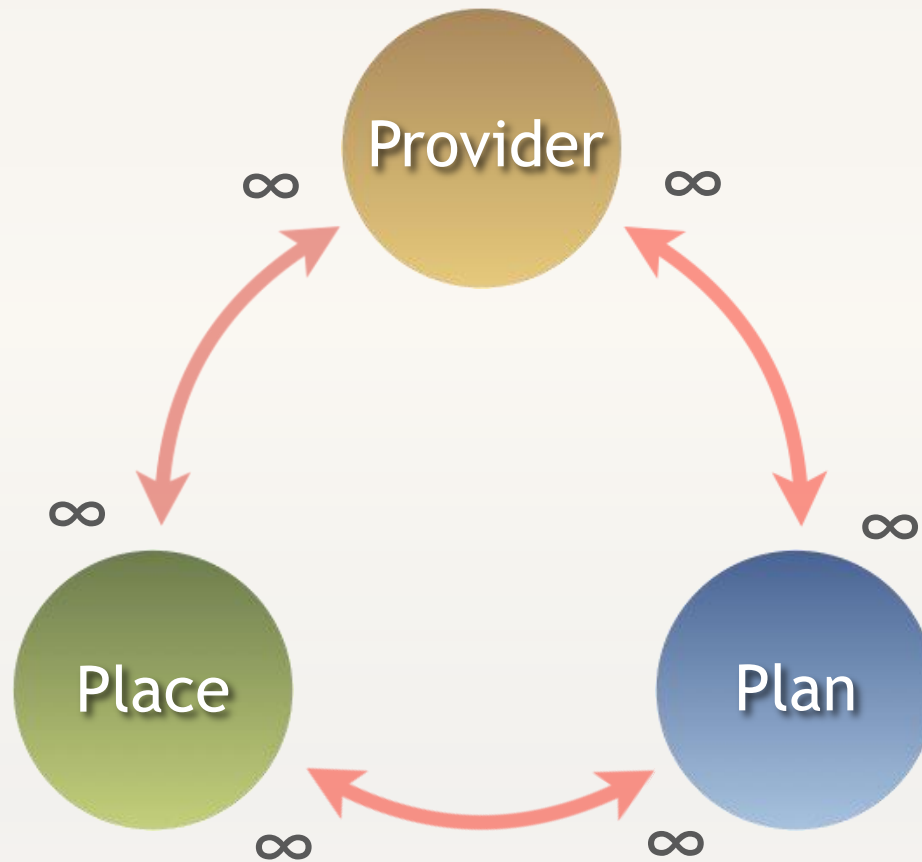
Opportunities

- Though no available public data source performs well against all use cases, **most datasets have value**
- The state has **better access to certain datasets** than private sector alternatives
- **Current data collection infrastructure could be leveraged** to create a “gold” directory dataset that iteratively updates as new or refreshed data becomes available

Design



Design



Design

source table

First	Last	Address	City	State	Zip	DOB	NPI
-------	------	---------	------	-------	-----	-----	-----

address standardization

Place

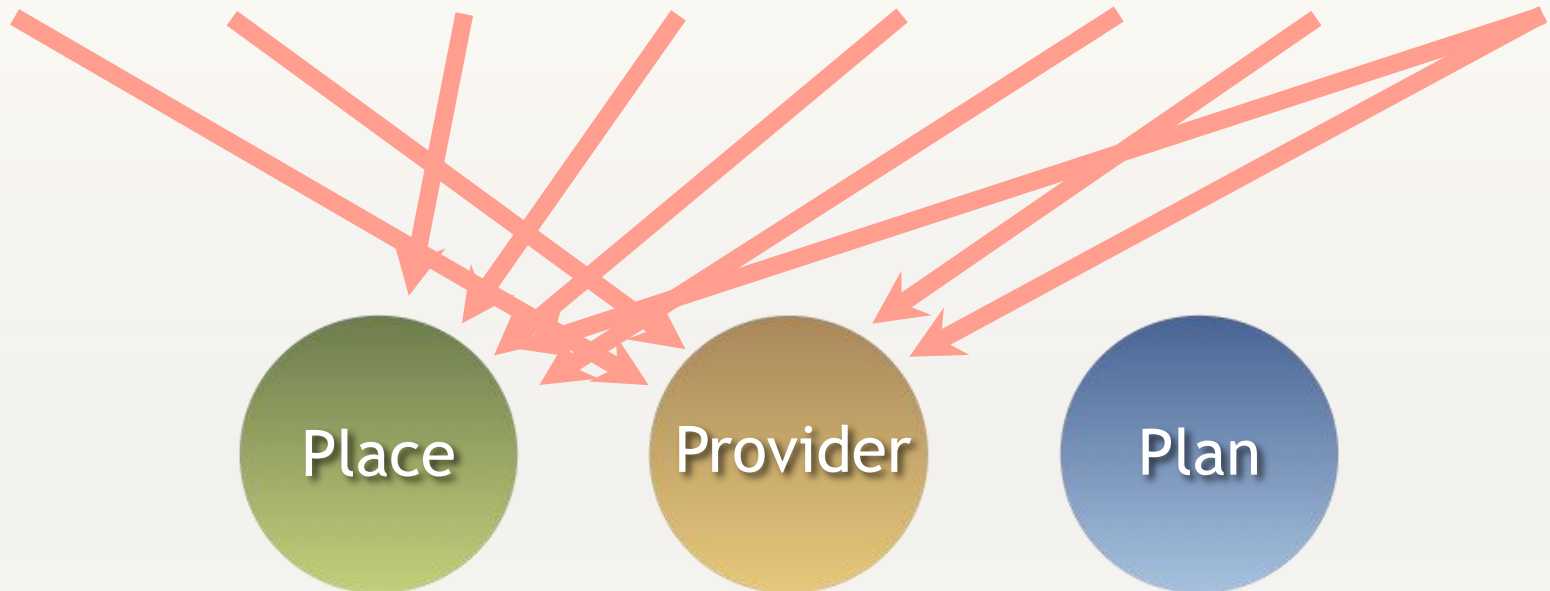
Provider

Plan

Design

source table

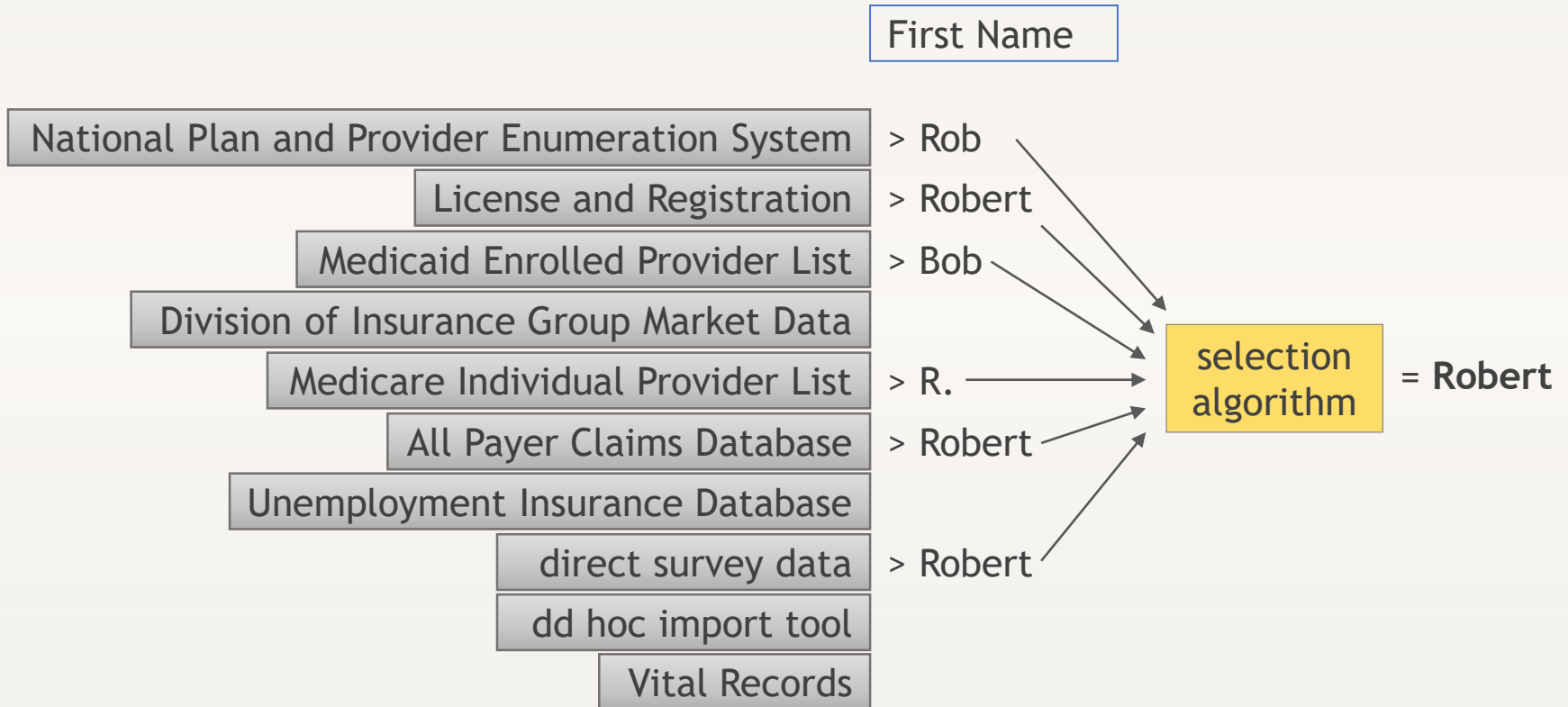
First	Last	Address	City	State	Zip	DOB	NPI
-------	------	---------	------	-------	-----	-----	-----



Design



Design



Implementation

gold directory data table

City	State	Zip	County	Phone	Gender	Race	Ethnicity	AGE	NPI	Profession1	LicenseNumber
Aurora	CO	80014-2637	Arapahoe	3038388874	1	5	0	70 - 79	1003931338	PSY	1775
Centennial	CO	80111-4628	Arapahoe	3032207992	0	5	0	60 - 69	1003940099	PSY	2041
Denver	CO	80205-5437	Denver	3033383800	1	5	0	70 - 79	1003943028	CSW	876223
Aurora	CO	80014-3141	Arapahoe	3033372794	1	5	0	30 - 39	1003943911	LPC	5096
Denver	CO	80204-4507	Denver	3034364949	1	5	0	70 - 79	1003962788	LPC	1976
Thornton	CO	80229-4318	Adams	3039209000	0	5	0	70 - 79	1003979113	PA	131
Colorado Springs	CO	80903-3358	El Paso	7196605351	0	5	0	60 - 69	1003998162	CSW	989599
Golden	CO	80403-7445	Jefferson	7206449355	1	2	0	60 - 69	1013004589	DR	25923
Englewood	CO	80110-2471	Arapahoe	3039522300	1	5	0	60 - 69	1013005024	DR	31476
Windsor	CO	80550-7029	Larimer	9702212290	1	5	0	70 - 79	1013009604	DR	19158
Colorado Springs	CO	80919-1509	El Paso	7196609951	1	5	0	60 - 69	1013024678	DR	23347
Brighton	CO	80601-4566	Adams	3039138506	0	5	0	40 - 49	1013047851	RN	162262
Grand Junction	CO	81501-8808	Mesa	9702569500	1	5	0	60 - 69	1013056159	DEN	6786
Greenwood Village	CO	80111-2884	Arapahoe	3034229438	0	5	0	60 - 69	1013058593	RN	61384
Berthoud	CO	80513-8449	Larimer	9704608477	0	5	0	40 - 49	1013073642	LPC	4186
Highlands Ranch	CO	80130-5137	Douglas	3038102313	0	5	0	50 - 59	1013089200	LPC	2047
Morrison	CO	80465-2133	Jefferson	7209390930	1	5	0	60 - 69	1013091537	DEN	6188
Denver	CO	80210-5851	Denver	3037785658	0	5	0	40 - 49	1013106996	DR	52375
Mancos	CO	81328-8927	Montezuma	9705337906	0	5	0	60 - 69	1013108786	LPC	3145
Colorado Springs	CO	80906-4484	El Paso	7202725127	1	5	0	70 - 79	1013138320	CSW	238
Aurora	CO	80013-3423	Arapahoe	7205304880	1	5	0	70 - 79	1013158724	LPC	5115
Parker	CO	80138-8564	Douglas	3038400713	0	5	0	60 - 69	1013160696	RN	68412

Implementation

user interface: directory

Name: CHRISTOPHER WESTFALL Entity Id: 147427

Entity/Gold | Addresses | Phone Number | Taxonomies | Licenses | Names | Email | Social Media | Education | Certification/Accreditation | Network | Identifiers
Language | Nature of Care | Training | PCO

Provider - (147427) Create New

Prefix

First Name Middle Name Last Name

Suffix

Organization Edit

Organization Name Affiliation

Address Edit

Address1

Address2

City State Zip Type

Quick Summary

NPI: 1003889890

Licenses

Taxonomies

207P00000X	Emergency Medicine
Allopathic	Allopathic Physician
Physician	Physician


Gender:

Race:

Ethnicity:

Implementation

user interface: search



COLORADO
Health Systems Directory

steve man LOGOFF

ENTITY SEARCH REVIEW MANAGEMENT LOGS METRICS USER MANAGEMENT REPORTS

First Name: Last Name: NPI: Incl Inactive:

State: Org Name: License #:

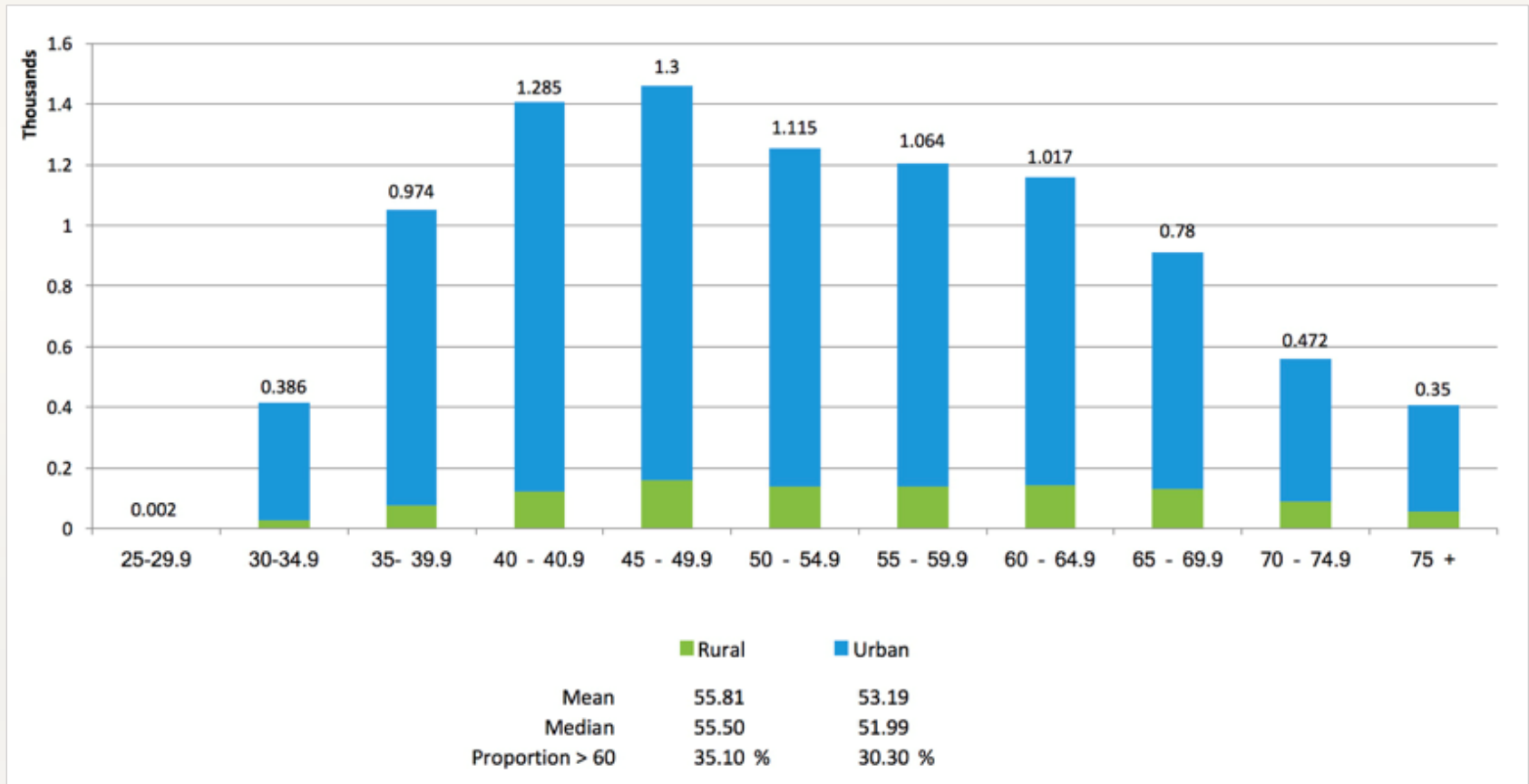
Phone: Entity Id:

[Search Results](#)

Entity Id	NPI	Entity	First Name	Last Name	Address1	Org Name	City	State	Zip	County	Phone	License
Sorry no results matched your search												

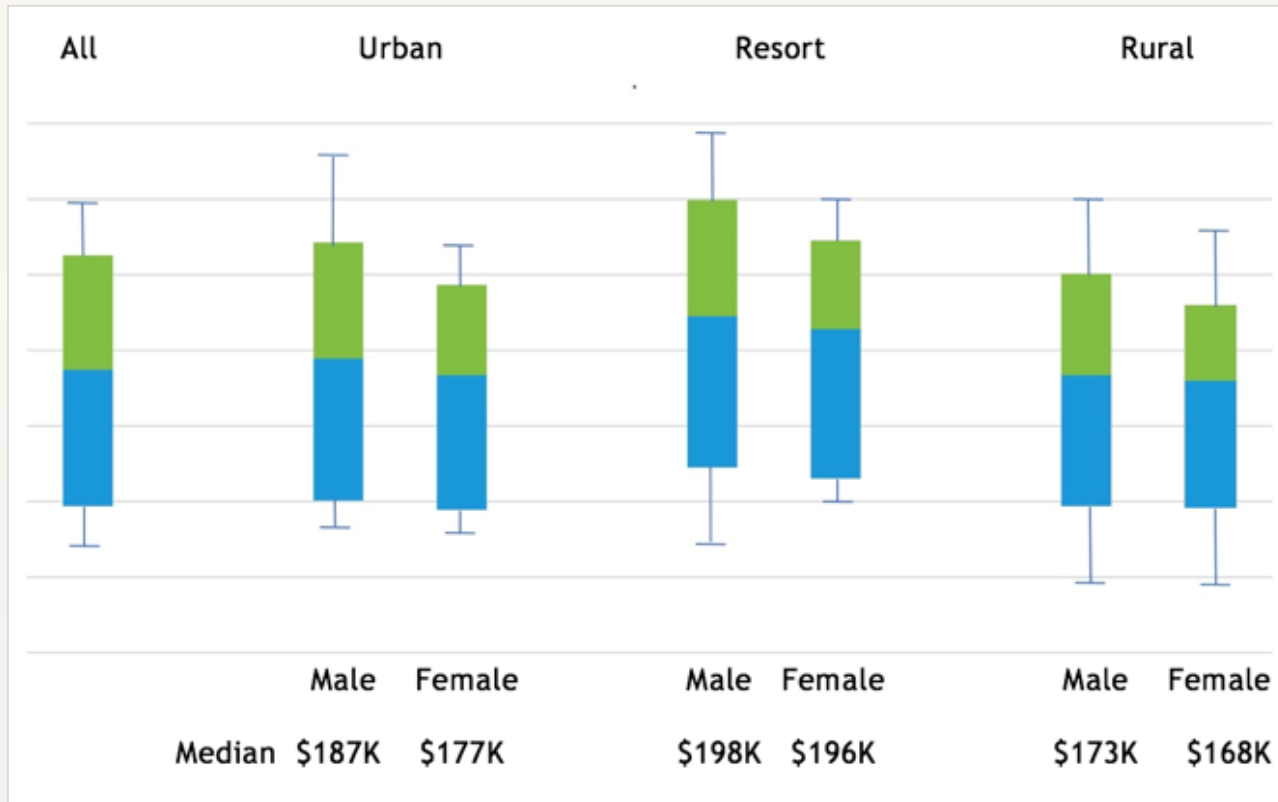
Implementation

workforce analysis: age distribution



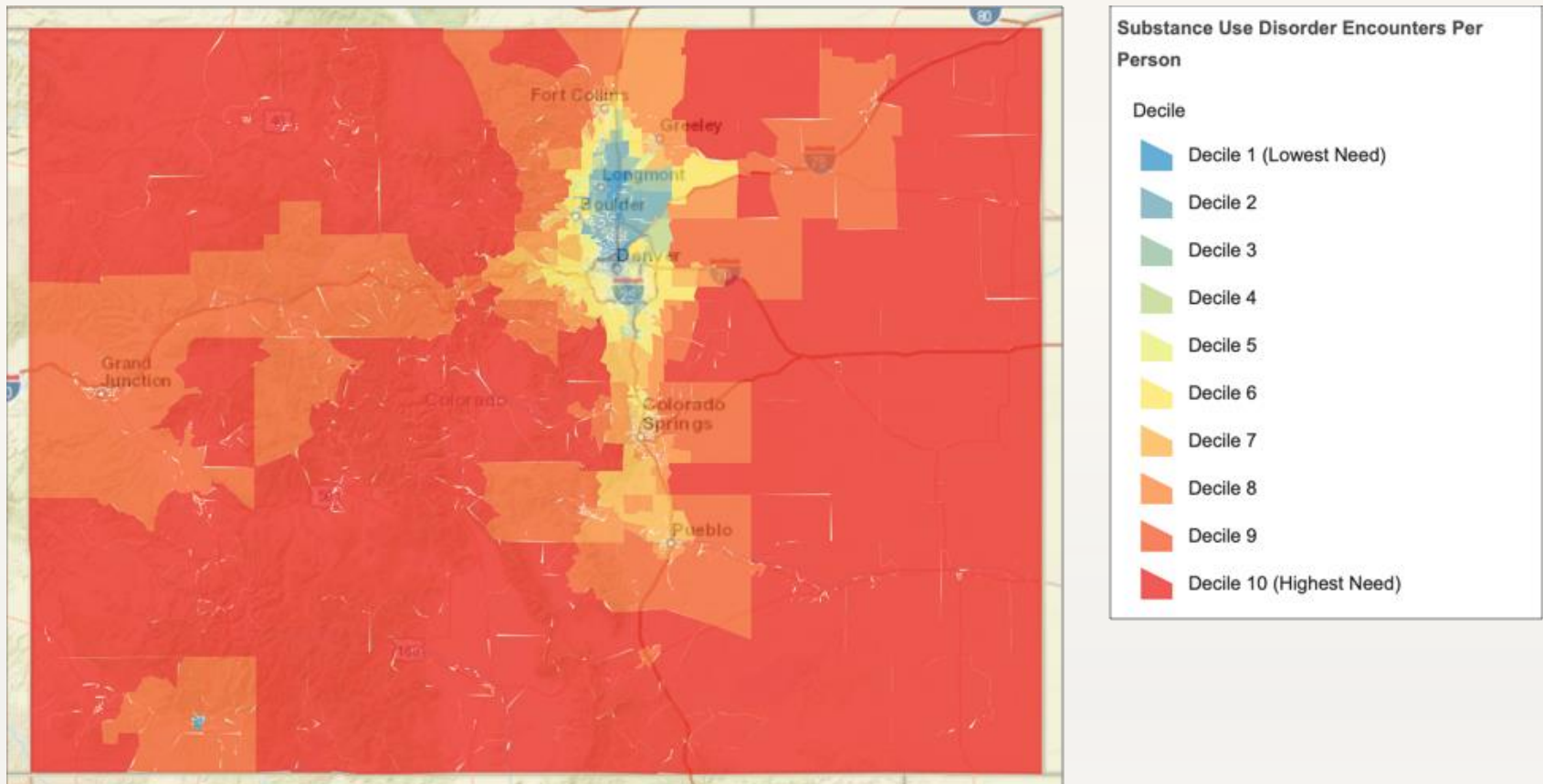
Implementation

workforce analysis: wage distribution



Implementation

workforce analysis: substance use disorder



Implementation

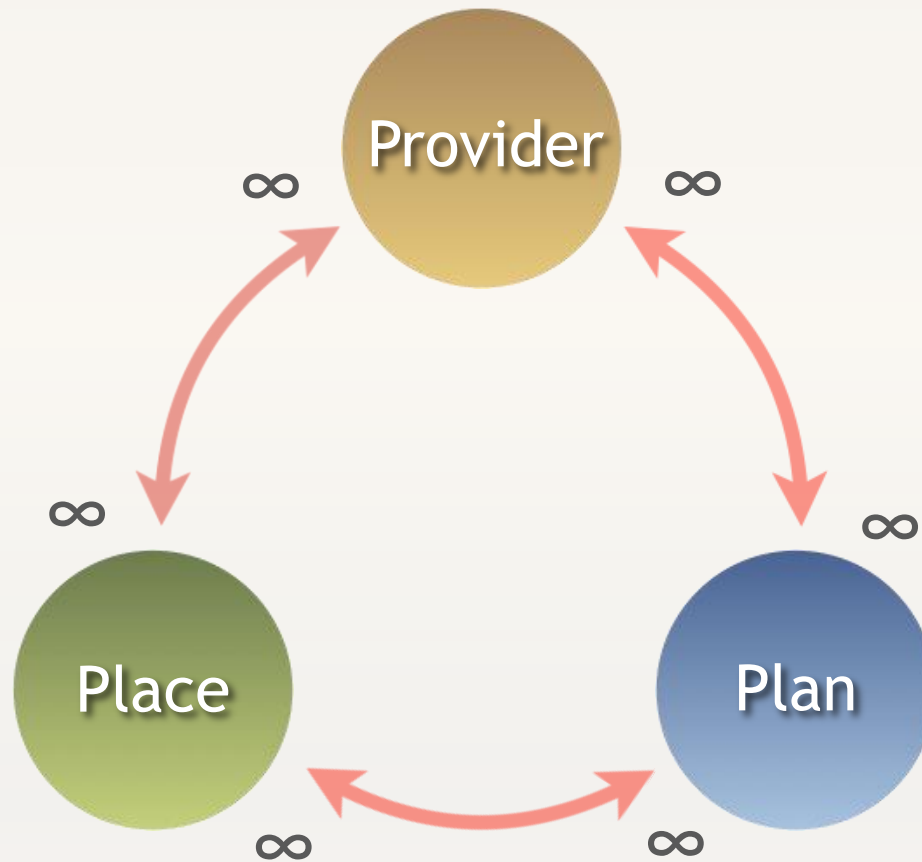
workforce analysis: churn by dicipline

	Retention Rates Post CHSC Contract			
	at practice	is service area in safety net setting	in service area not in safety net setting	in Colorado in safety net setting
Physician Assistants	50%	4%	0%	8%
Primary Care Nurse Practices	39%	6%	11%	0%
Primary Care Physicians	54%	5%	11%	4%
Dentists	41%	6%	6%	12%
Hygienists	100%	0%	0%	0%
Clinical Social Workers	27%	20%	20%	0%
Licensed Professional Counselors	39%	6%	16%	6%
Marriage and Family Therapists	100%	0%	0%	0%

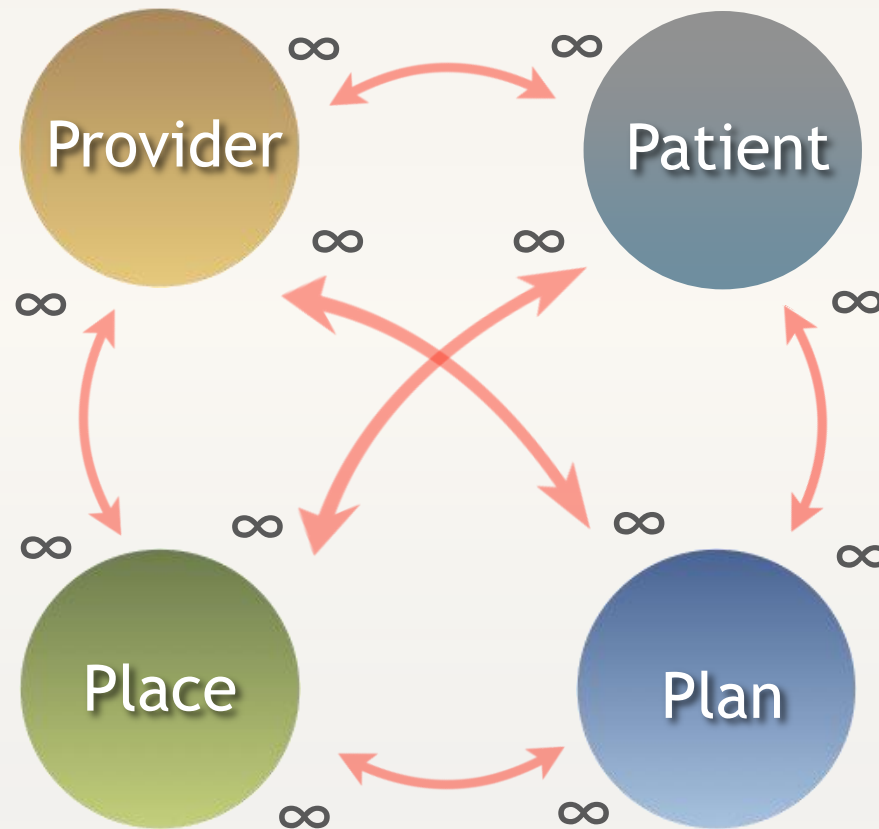
Development Goals

- Implement data QI processes
- Implement Application Programming Interface (API)
- Implement data cleaning tool for public health registries
- Integrate additional data sources
- Develop Soundex
- Develop additional reports

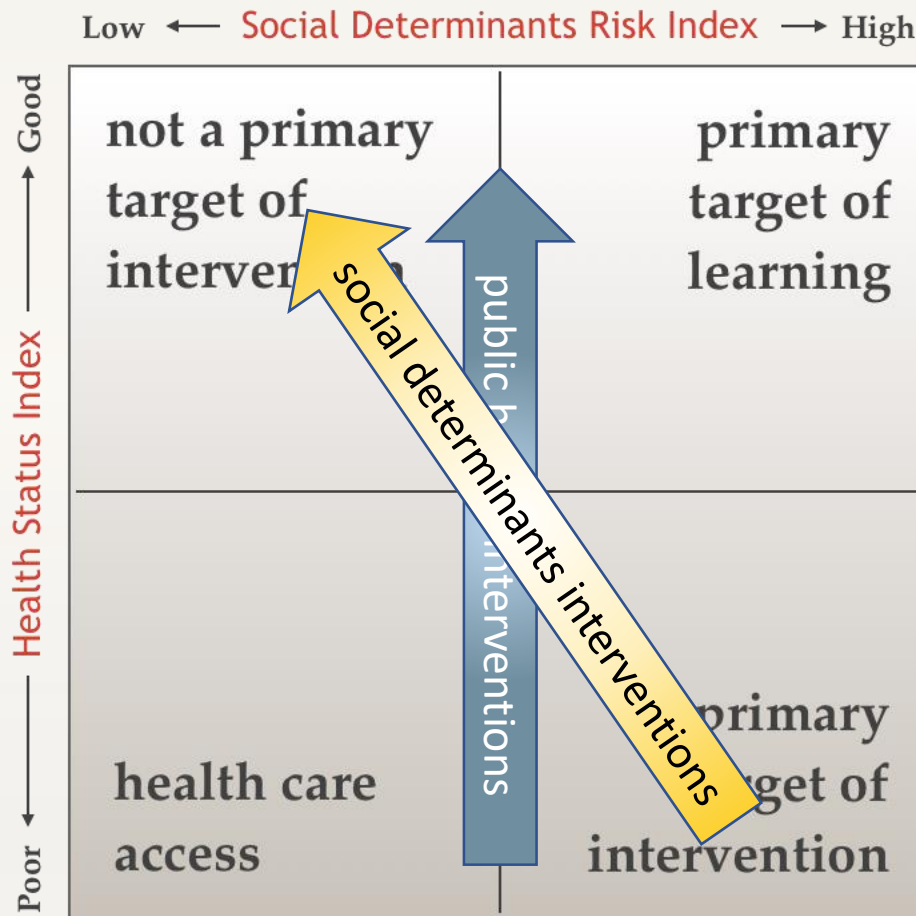
Development Goals



Development Goals

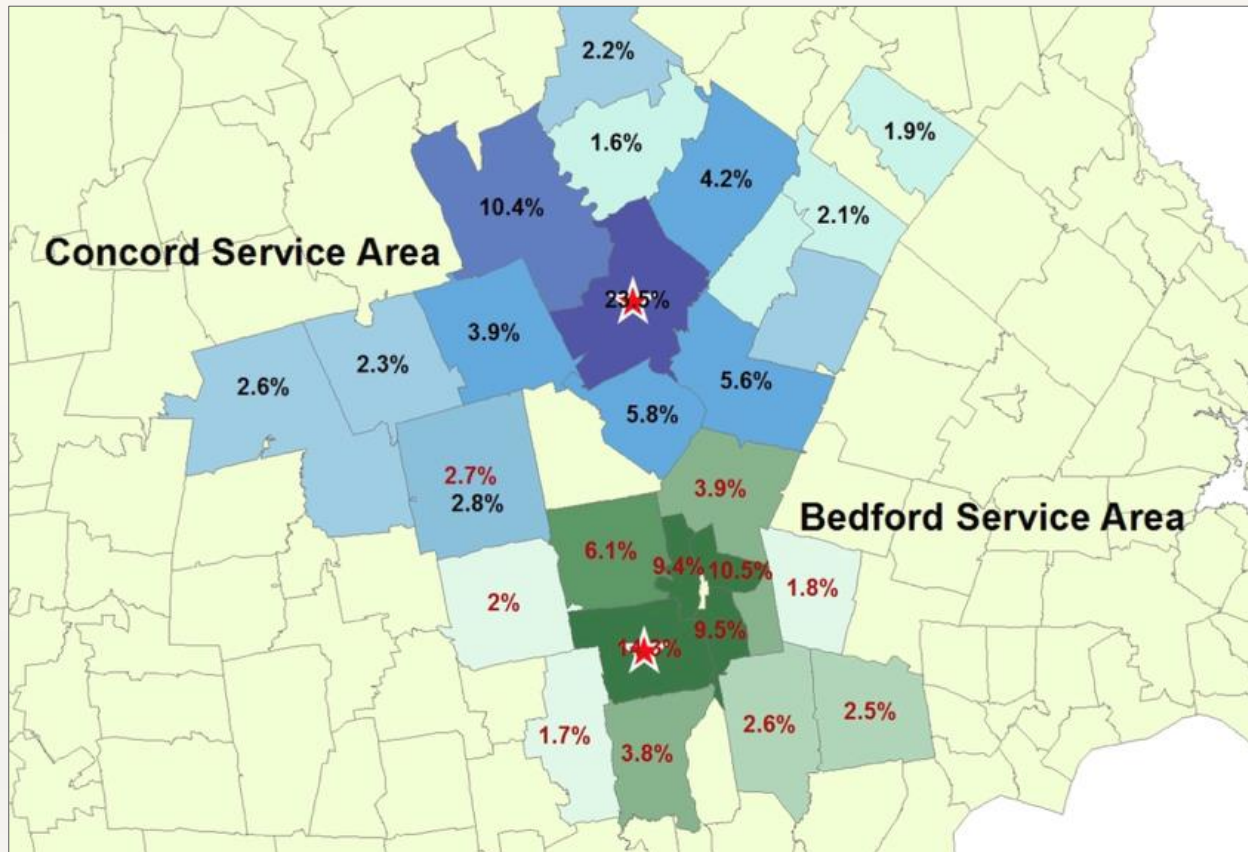


Development Goals



Development Goals

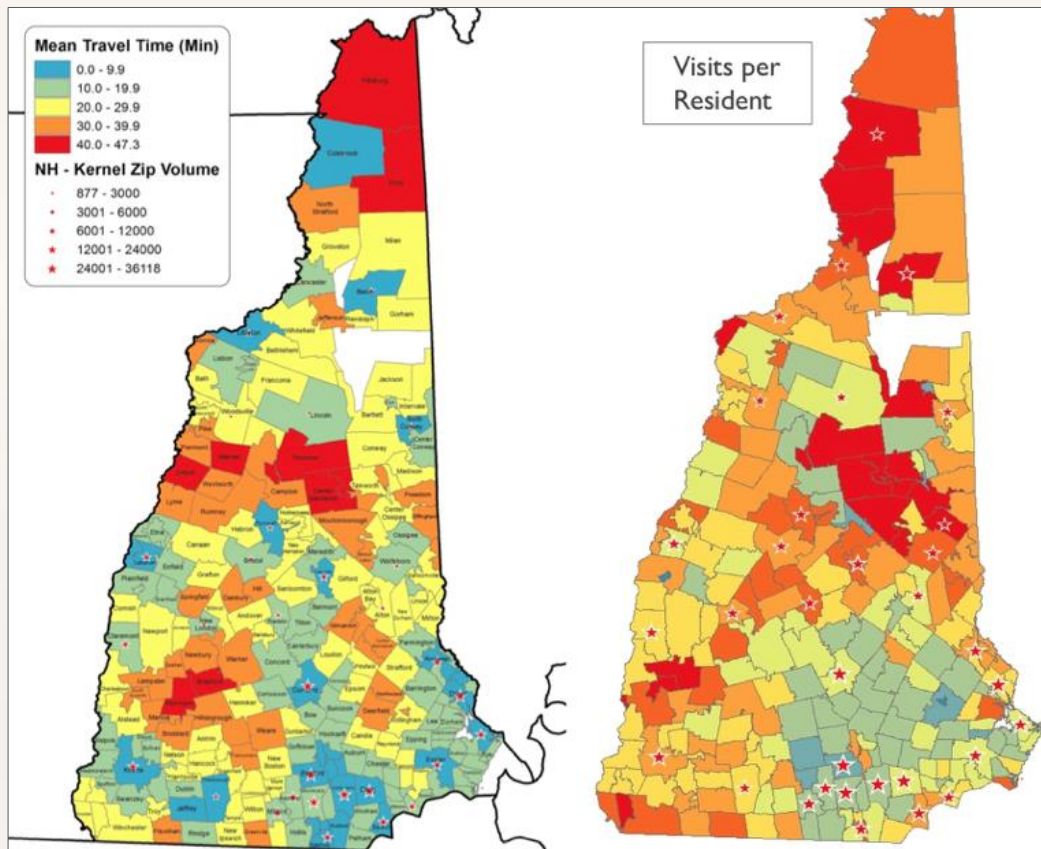
claims analysis: origin-destination preference



Eric Turer & Steve Schaffer, JSI Inc. (2018)

Development Goals

claims analysis: mean travel time & care intensity



Eric Turer & Steve Schaffer, JSI Inc. (2018)

Questions

Steve Holloway, MPH
Branch Chief, Health Access



COLORADO
Department of Public
Health & Environment

steve.holloway@state.co.us

303-692-2582

