Inequalities in Access to High-Quality Early Care and Education Using Family-Centered Measures of Access

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Preliminary Findings: Please do not cite

Introduction

- Studies of parents' decisions about child care often have limited information about the options parents have and the tradeoffs they face in terms of availability, price and quality.

- Most studies of child care supply use area-based measures (which assume that parents' options are located within administrative boundaries such as counties or ZIP code areas).

- Growing availability of geo-coded provider location data provides new opportunities for mapping and spatial analysis.

- Our goal is to develop distance-based measures of access based on provider and household locations that account for proximity and affordability.

What factors influence access to high-quality ECE (from parent's perspective)?

- **Where is it located?**
  - Parents generally seek ECE close to home (or work)

- **What does it cost?**
  - Higher-quality ECE may cost more. Although free public programs such as Head Start or public pre-kindergarten may be highly rated, many have limited availability.

- Other considerations:
  - Availability (open slot)
  - Type of setting (center, family child care)
  - Opening hours and days relative to parent work schedules
  - Relatives, cultural or language preferences
  - Information and knowledge about availability and quality

Research Questions

1. How much is the "<u>quality premium</u>?" That is, how much more does the average family have to pay to access high quality care, accounting for ...

- differences in travel times
- differences in the price of care, and
- the spatial distribution of providers relative to families?

2. How does access to high-quality care vary by income, location, and race/ethnicity?

3. What socio-demographic characteristics are associated with higher (or lower) levels of access to high-quality care?

Two sets of distance-based measures

1) Based on closest provider to the family's location

   – Total implicit cost of access= travel costs plus weekly price (by age group)

2) Based on all providers within a 10-mile radius of the family

   – Cumulative opportunity count measures (number or capacity, adjusted for affordability and demand)

Data on ECE in Minnesota

- NACCRRAware database of licensed child care providers in Minnesota
  – Child care centers
  – Licensed family child care providers
  – Data include location, capacity, price, type of provider

- Parent Aware (QRIS)
  – Child care centers and Family Child Care (FCC)
  – Head Start and public school-based prekindergarten programs
  – Voluntary participation by providers
 – Four rating levels (one to four stars)

Characteristics of providers

We categorize providers into four groups:

1. <u>Unrated</u>: Provider is not rated in Parent Aware QRIS (83%)

2. <u>Lower-rated, market</u>: Provider has one or two-star rating (5%)

3. <u>Higher-rated, market</u>: Provider has three- or four-star rating (5%)

4. <u>Higher rated, public</u>: Head Start/Early Head Start, School Readiness/PreK programs (6%)
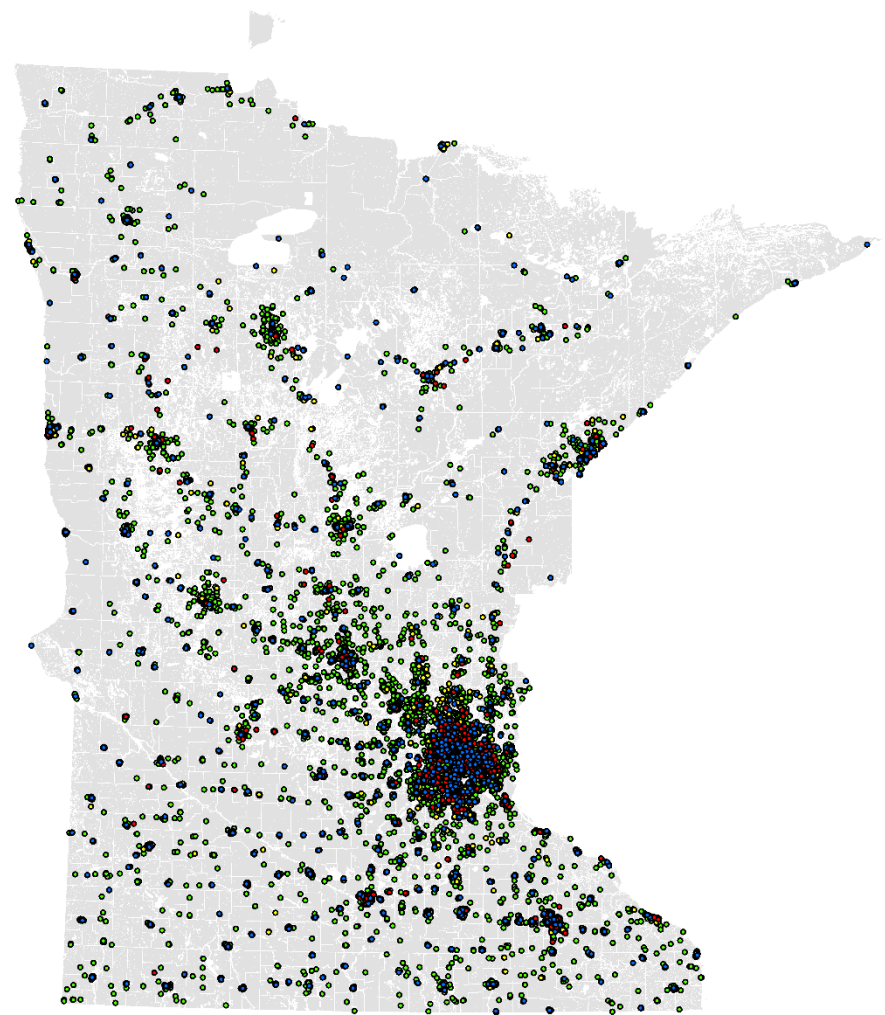
Providers	N	%
Statewide	11,843	100
Mpls-St Paul metro area	5543	46.8
Greater Minnesota	6,300	53.2
<u>Type of provider</u>		
Centers	1859	15.7
Family child care (FCC)	9984	84.3

Distribution of Families with Children under 6 [20% sample]
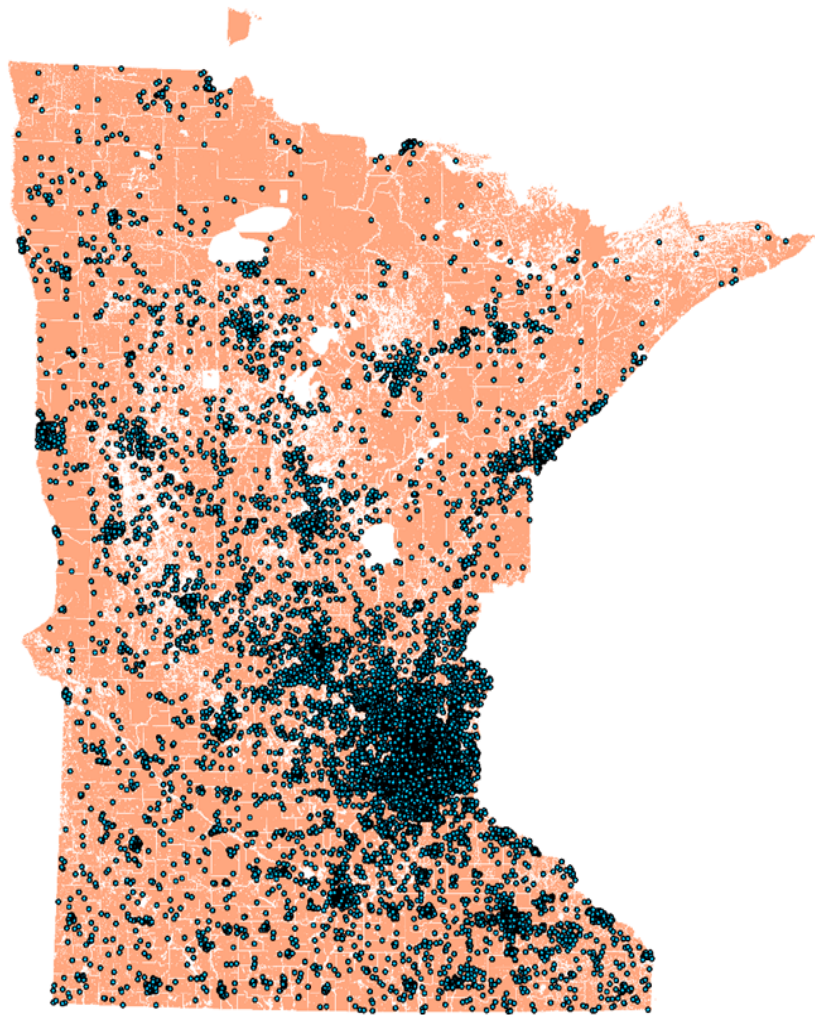
Source: ACS 2010-2014 5% sample

Minnesota Childcare Providers By Parent Aware Rating

Source: NACCRAWare database

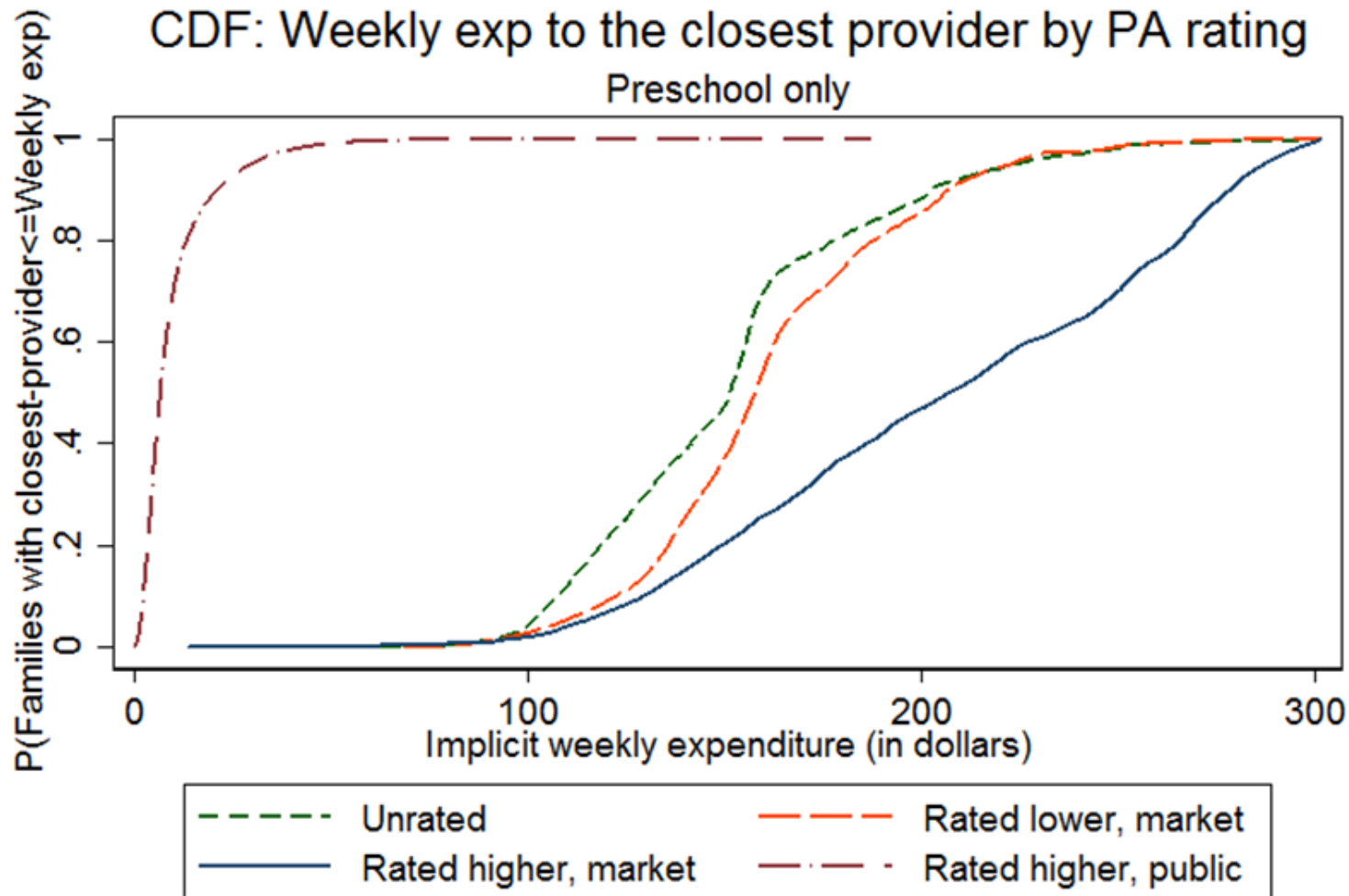# Measuring the family's total implicit costs of accessing care

- **<u>Travel cost</u>**
  - Based on driving time between household and provider
  - Cost of travel: Travel time * 5 days * 2 trips * $10/hr

- **<u>Cost (or price) of care</u>**
  - Weekly price for full-time care (by age group)

- **<u>Total implicit cost for full-time care</u>**

  = travel cost + weekly price

<u>Quality premium:</u> The ratio of total implicit cost at the closest highly rated provider to the closest unrated provider.

# Cost measures by quality category for preschool age children, 2015

Type of provider	Mean travel time (one way) to closest provider (min.)	Mean weekly price at closest provider ($)	Mean total implicit access cost ($)
Not rated	3.1	$147	$152
Rated lower, market	8.3	$149	$163
Rated higher, market	10.0	$193	$210
Public: Head Start, school PreK	5.9	n.a.	$9.82

Distribution of total implicit cost by quality category, preschool age, 2015

CDF: Weekly exp to the closest provider by PA rating

Preschool only

- - - - Unrated
——— Rated higher, market
— — — Rated lower, market
—·—·— Rated higher, public

Note: 10 dollars/hr travel

Distribution of quality premium (access costs at highly rated market providers divided by unrated providers)
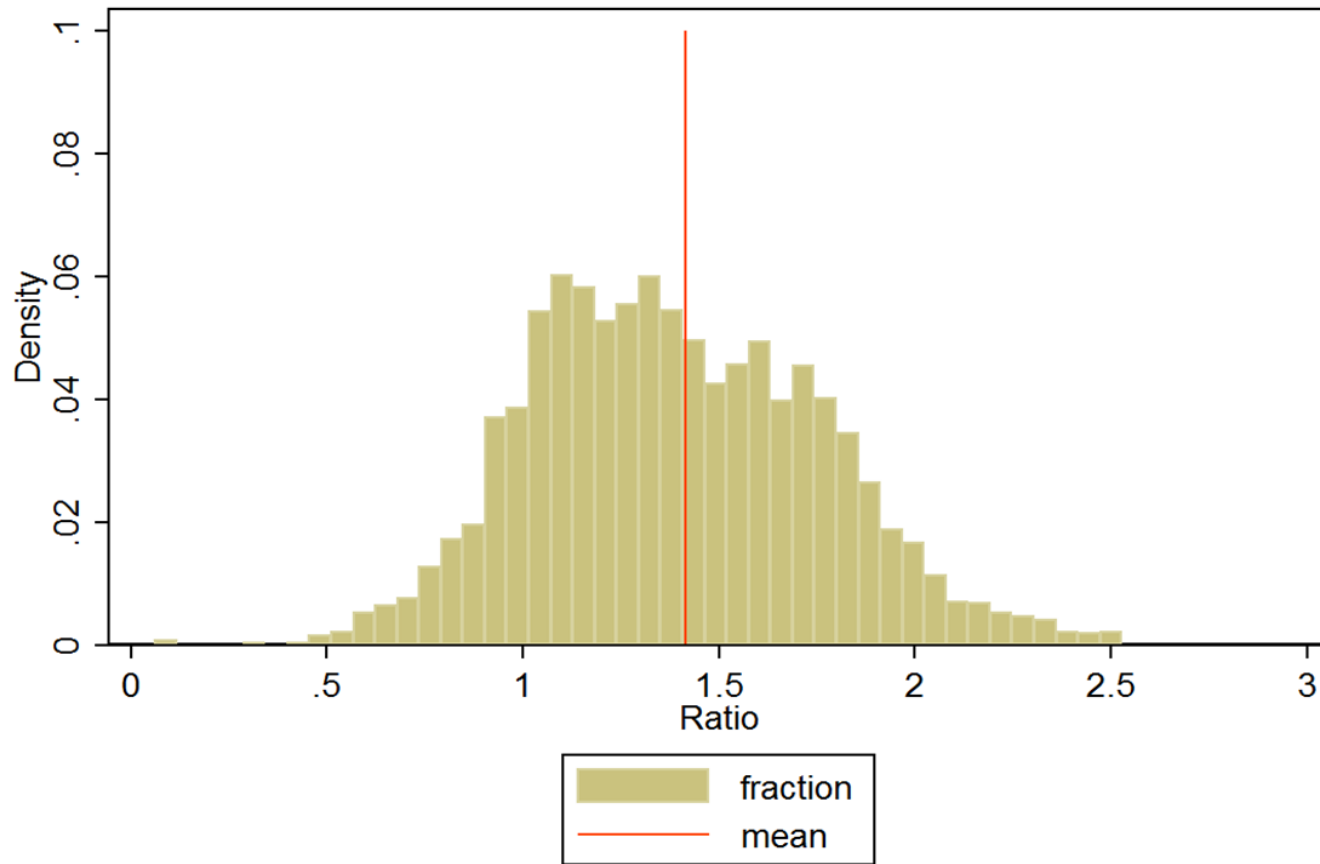
x-axis truncated at 99th percentile

Disparities in access to high quality ECE

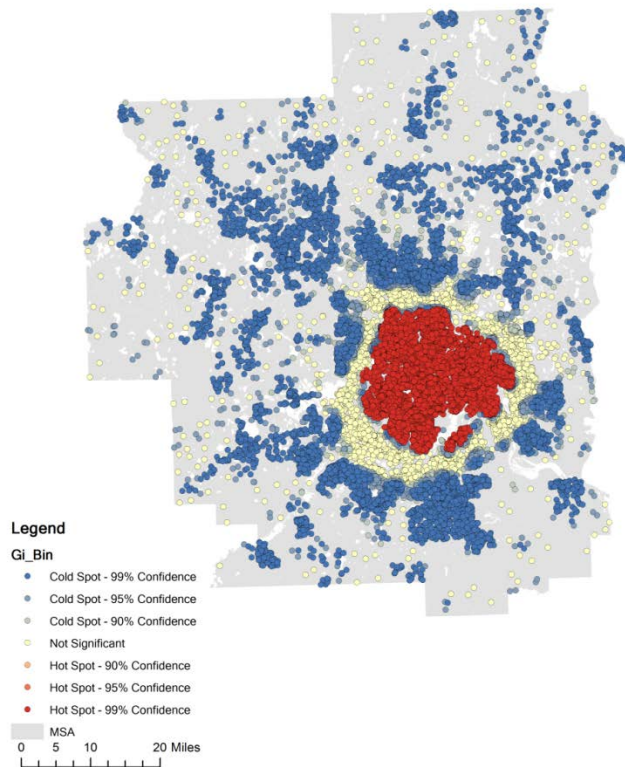| Mean	White	Black	Hispanic	American Indian	Asian
Travel time (min)	7.5	2.6	4.9	17.3	3.7
Weekly total access cost	$132	$143	$131	$133	$147
Quality premium ratio	1.42	1.39	1.37	1.5	1.45
Access cost as a share of income	0.139	0.304	0.202	0.332	0.162

Cumulative Opportunity Measures of Access

Cumulative opportunity measures of access

- Includes providers within a 10-mile radius of the family location

- Three types of measures:
    - Availability: Capacity (number of slots)
    - Affordability: Share of slots below 10% (or 20%) of family income
    - Demand–adjusted: divide by the number of families within one mile of the provider. Thus, providers surrounded by fewer families are weighted more heavily in terms of access opportunities.
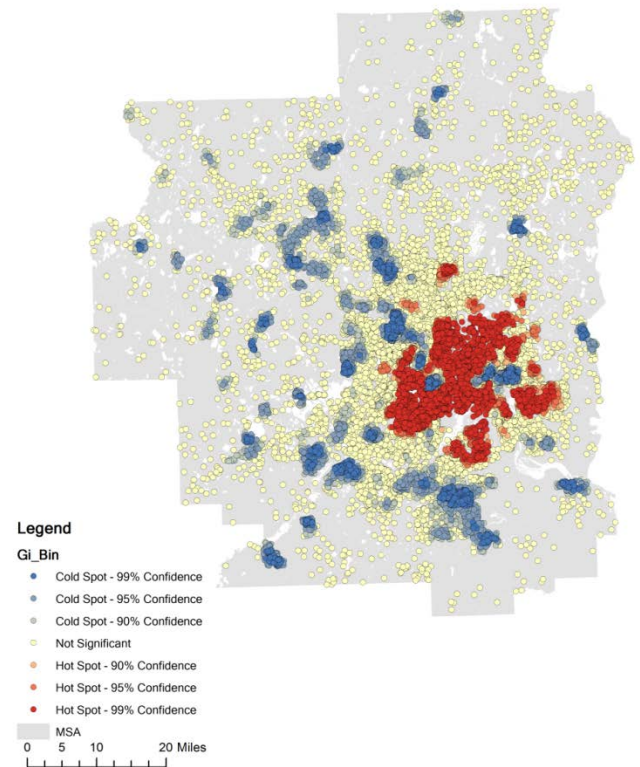
"Hotspot" Analysis: Clusters of high-quality providers in Minneapolis-St Paul MSA

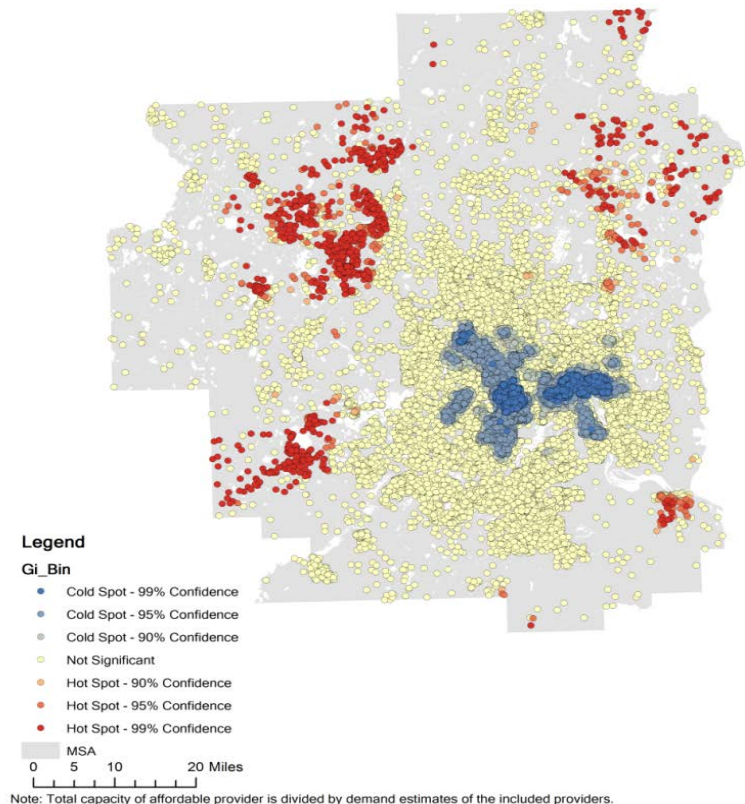Red=More capacity at higher-rated market providers

Red=More capacity at *affordable* higher-rated market providers

"Hotspot" Analysis: Clusters of high-quality providers adjusted for affordability and demand (Minneapolis-St Paul MSA)

- Capacity at higher-rated providers adjusted for affordability and demand (number of families close by) shows that there is much less access (blue dots) to highly rated care in the central areas of Minneapolis and St Paul.

[Capacity] Affordable high-quality providers in 10 mile radius

MSP MSA (Provider demand-adjusted)

Legend

Gi_Bin
- Cold Spot - 99% Confidence
- Cold Spot - 95% Confidence
- Cold Spot - 90% Confidence
- Not Significant
- Hot Spot - 90% Confidence
- Hot Spot - 95% Confidence
- Hot Spot - 99% Confidence

MSA

0   5   10   20 Miles

Note: Total capacity of affordable provider is divided by demand estimates of the included providers.

Cumulative opportunity measures by demographic subgroup and quality

Type of provider	Capacity of providers within 10miles				
	White	Black	Hispanic	Amer.Indian	Asian
Not rated	6902	15381	10153	4358	12716
Higher rated	2476	6138	4037	1609	5004
Capacity of affordable providers within 10miles					
Not rated	3265	2954	3038	1035	4871
Higher rated	286.7	286.8	280.6	75.63	431.5
[Demand-adjusted] Capacity of affordable provider within 10miles					
Not rated	112.5	10.29	63.30	159.4	22.20
Higher rated	71.92	22.76	49.23	25.67	24.61
Note: Affordability based on 10% of income threshold.					

Access Measure Regressions at the Block Group Level

	N Available	N Affordable	Ln(N Affordable ,Demand adjusted)	N Available	N Affordable	Ln(N Affordable ,Demand adjusted)
Share Black	11702.9***	1770.1**	-3.84***	9628.9***	1400.0**	-2.08***
Share A.Indian	-4464.6***	-2445.2***	-1.61	1763.2***	885.3***	-2.91***
Share Asian	11015.2***	3187.3**	-4.25***	5875.9***	948.1	-2.23***
Share Hispanic	4422.9***	254.2	-2.23***	2663.1**	-105.1	-0.92***
ln (pop density)				659.1***	283.3***	-0.29***
ln (median inc)				1909.6***	1203.8***	-0.08
Share family with childu6				596.909	240.2	0.98**
Share employed				-443.129	-366.3	0.70*
R-squared	0.332	0.073	0.134	0.601	0.415	0.236

Conclusions

- Distance-based measures of access provides information about trade-offs families face in terms of quality, price and distance.
  - The measures are family-centered, and allow families to cross administrative boundaries.

- Multiple measures show similar patterns: Access is highest in central urban areas measured by capacity, but falls dramatically when affordability and demand are factored in.
  - Given the concentration of certain groups in these areas, access to higher rated market care is about 1/3 as high for Black, American Indian and Asian families, and about 2/3 for Hispanic families, compared to White families.

Ongoing and future work

- Measures development
  - Comparison of access measures

- Policy analysis and changes in access over time
  - We are constructing a panel data set of provider information to analyze how policy and funding have influenced access over time in Minnesota.

Acknowledgements