

Fragmentation of hospital use among high-utilizing urban residents

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Hospital utilization and health care costs

- High utilization major component of health care costs
 - 10% of patients - 70% of health care expenditures (NEJM, 361:16, 2009)
 - New Jersey Charity Care: top 5% of utilizers 19% of (inpatient) charges
 - Camden Coalition data (inpatient and ED):
 - 1% patients – 30% of costs
 - 13% of patients – 80% of costs
 - 20% of patients – 90% of costs
- Payment reform strategies designed for high utilizers
 - Success of ACO's depends on patient loyalty to participants
 - Use of multiple hospitals and EDs more common among high utilizers
 - Increases desirability of multiple hospital participation in ACO's,
 - Raises anti-trust concerns

Questions

- What is the extent of fragmentation?
- How does it vary by utilization, payer, urban residence?
- What percent of hospital visits are at the hospital visited most?
- What are the implications for ACO design?

Data and design

New Jersey hospital discharge data, 2008-2009

- Inpatient only
- Linked with charity care file
- Cohort of patients with index visit between 1/1/2008 and 6/30/2008
- Eighteen months of exposure to subsequent visits
- Excludes intra-state movers and non-residents

- “Fragmentation”: proportion of patients that use more than one hospital
- “Concentration”: proportion of visits occurring at the hospital visited most by those who visited more than one hospital.
- Urban Residence: resident in one of 21 New Jersey cities

Descriptive Statistics

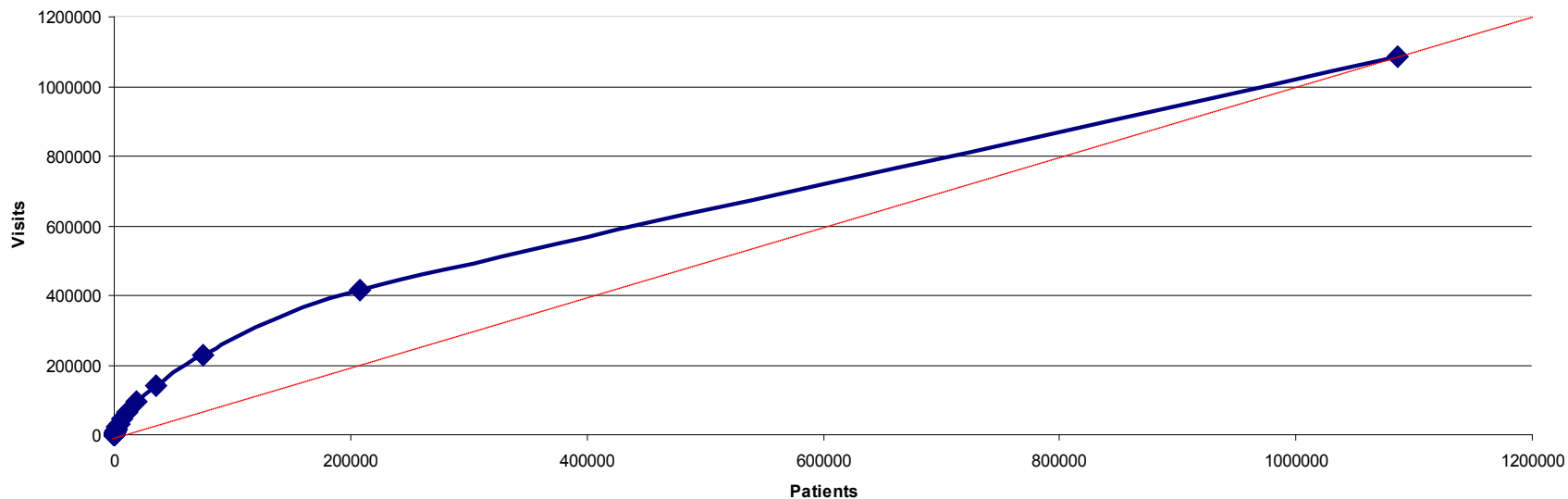
Non-Urban

- 1,125,227 patients
- 1,680,704 visits
- 1.49 VPP
- 75% - 1 visit
- 14% - 2 visits
- @10% - 3 visits +
- 30% of all visits

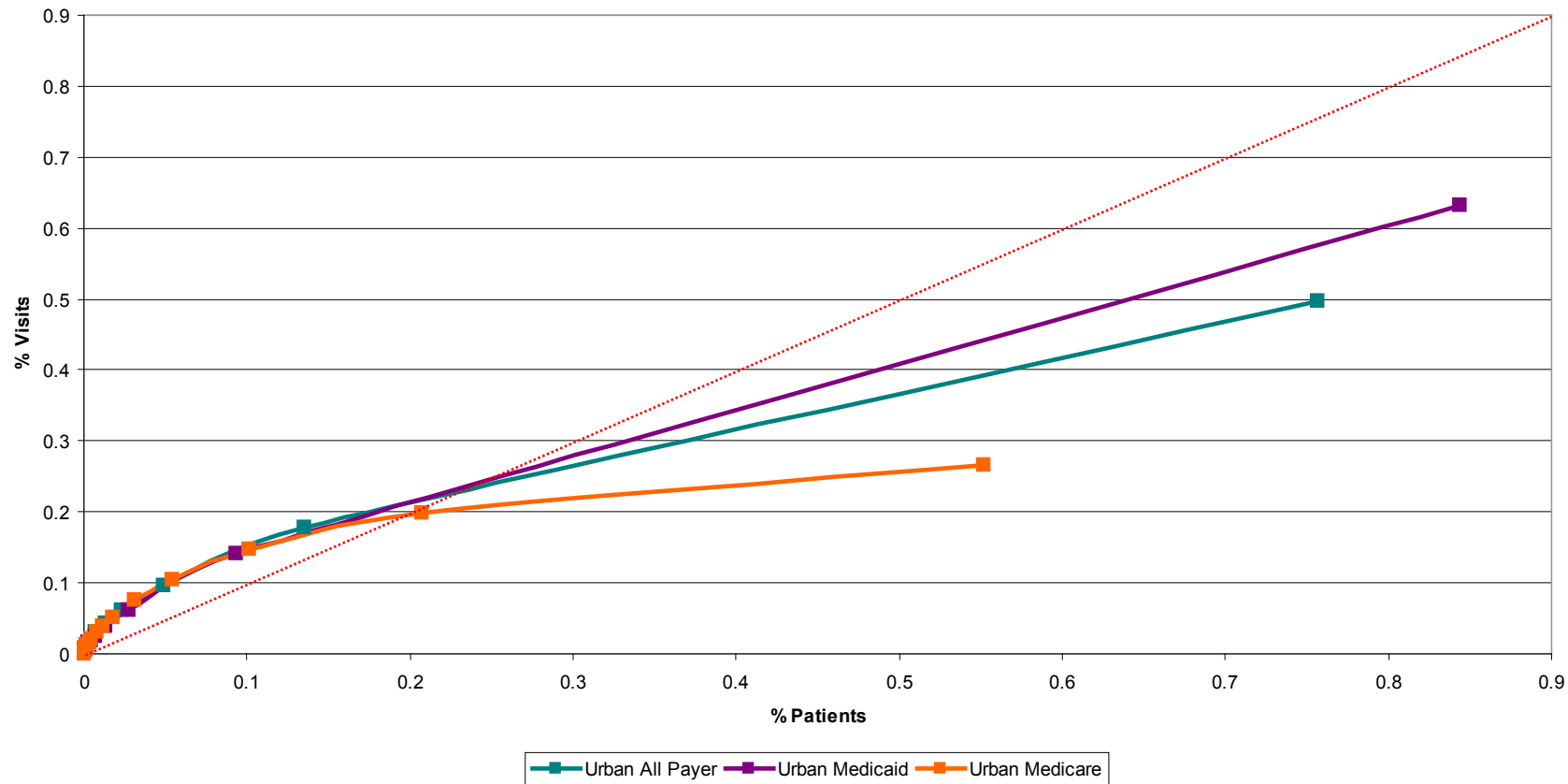
Urban

- 341,218 patients
- 519,749 visits
- 1.52 VPP
- 76% - 1 visit
- 13% - 2 visits
- @10% - 3 visits
- 30% of all visits

Patients and Visits, NJ 2008-2009



Utilization distribution, New Jersey, 2008-9



Characteristics of high utilizers, all payers

Patient Type	Visits per patient	Fragmentation	Concentration
Non-Urban			
Top 1%	9.3	31.7%	70.6%
Top 5%	5.7	31.2%	66.7%
Urban			
Top 1%	11.2	48.9%	72.3%
Top 5%	6.3	43.3%	66.5%

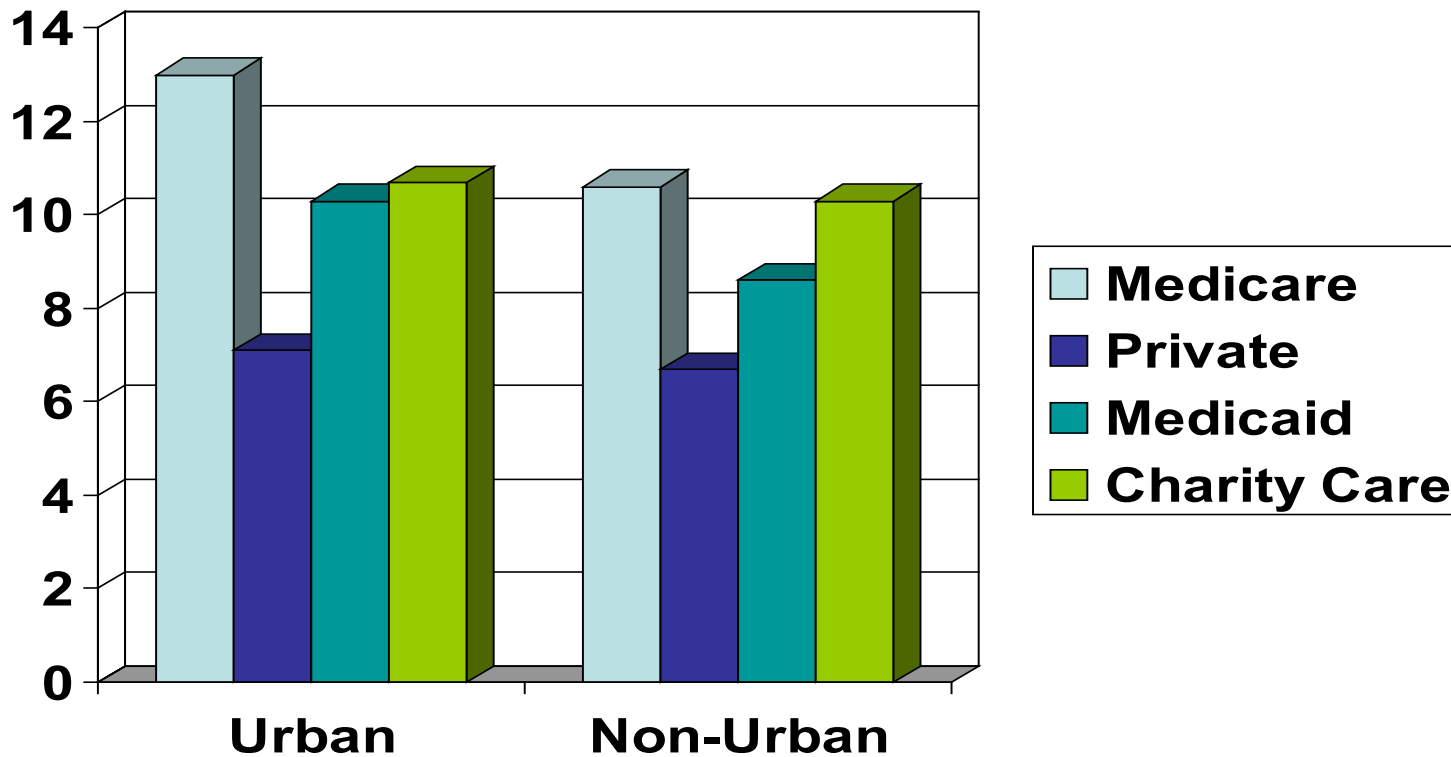
Source: 2008-9 New Jersey Hospital Discharge Data

Utilization and Fragmentation even higher in very poor cities: Camden, Trenton, Newark in 2007

Patient Type	Visits per patient	Fragmentation	Concentration
Inpatient			
Top 1%	9.3	63.0%	69.1%
Top 5%	5.3	51.1%	65.5%
Emergency Room			
Top 1%	14.9	75.1%	66.6%
Top 5%	7.5	60.3%	66.5%

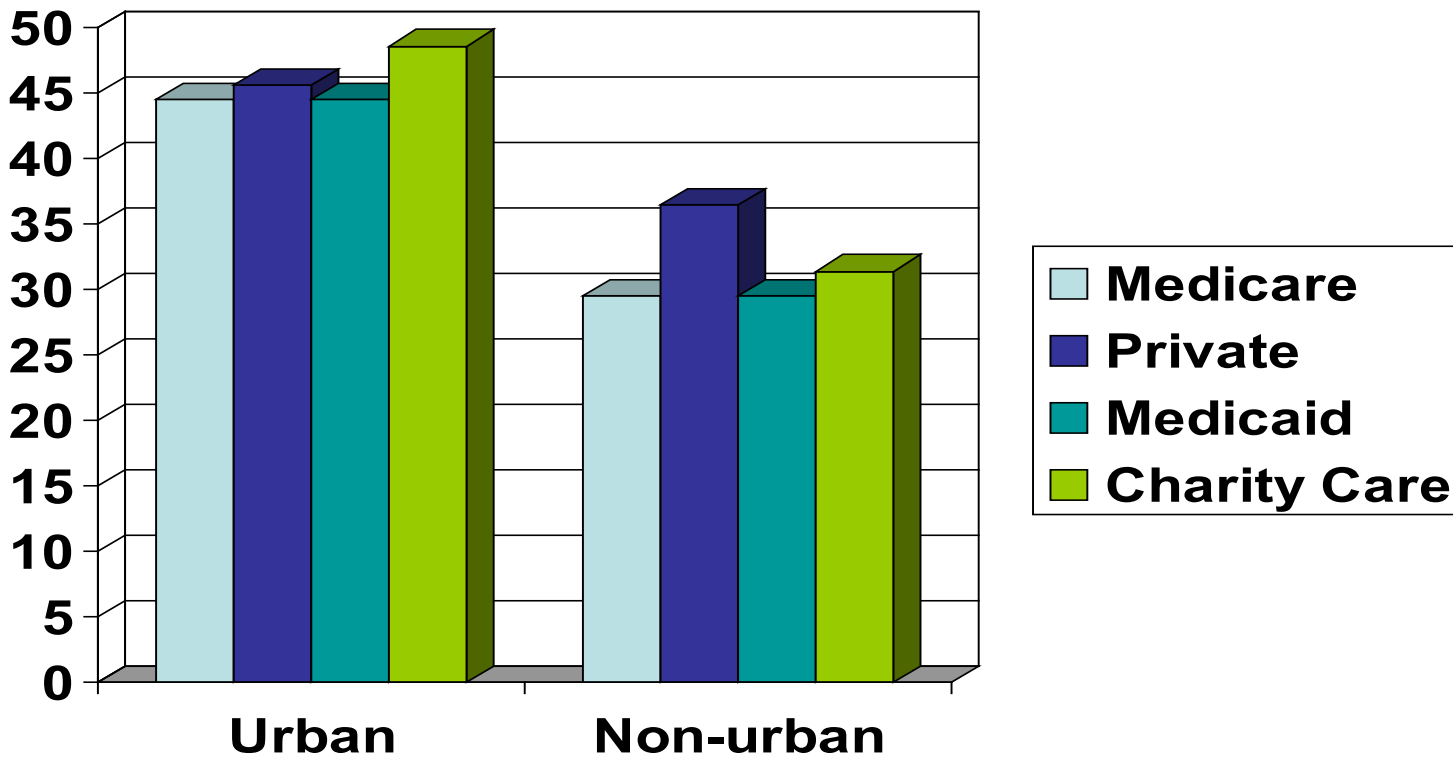
2007 Hospital Discharge data, residents of Camden, Trenton and Newark

Visits per patient, top 1% of utilizers



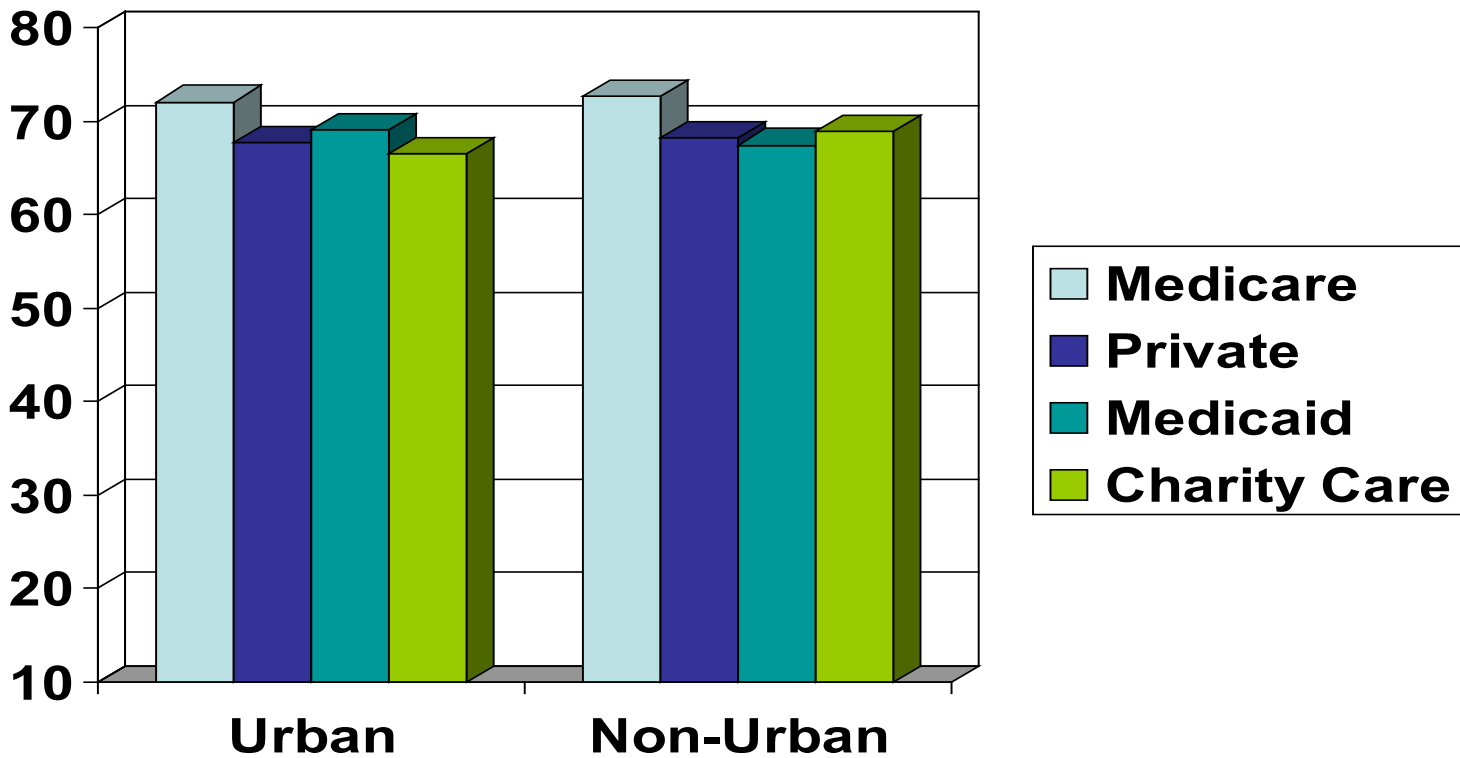
Source: 2008-9 New Jersey Hospital Discharge Data, top 1% of utilizers

Fragmentation, top 1% of utilizers



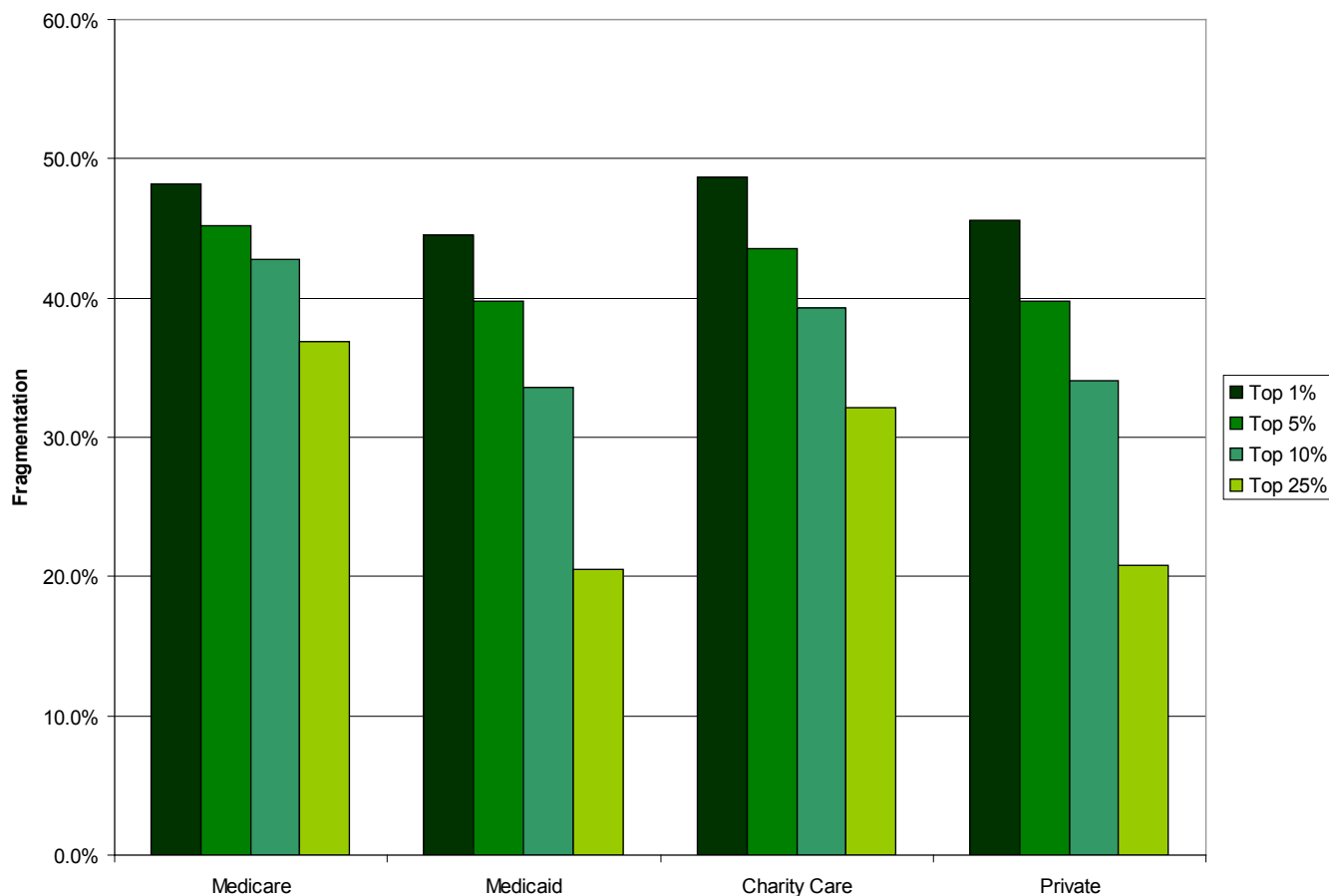
Source: 2008-9 New Jersey Hospital Discharge Data, top 1% of utilizers

Concentration, top 1% of utilizers

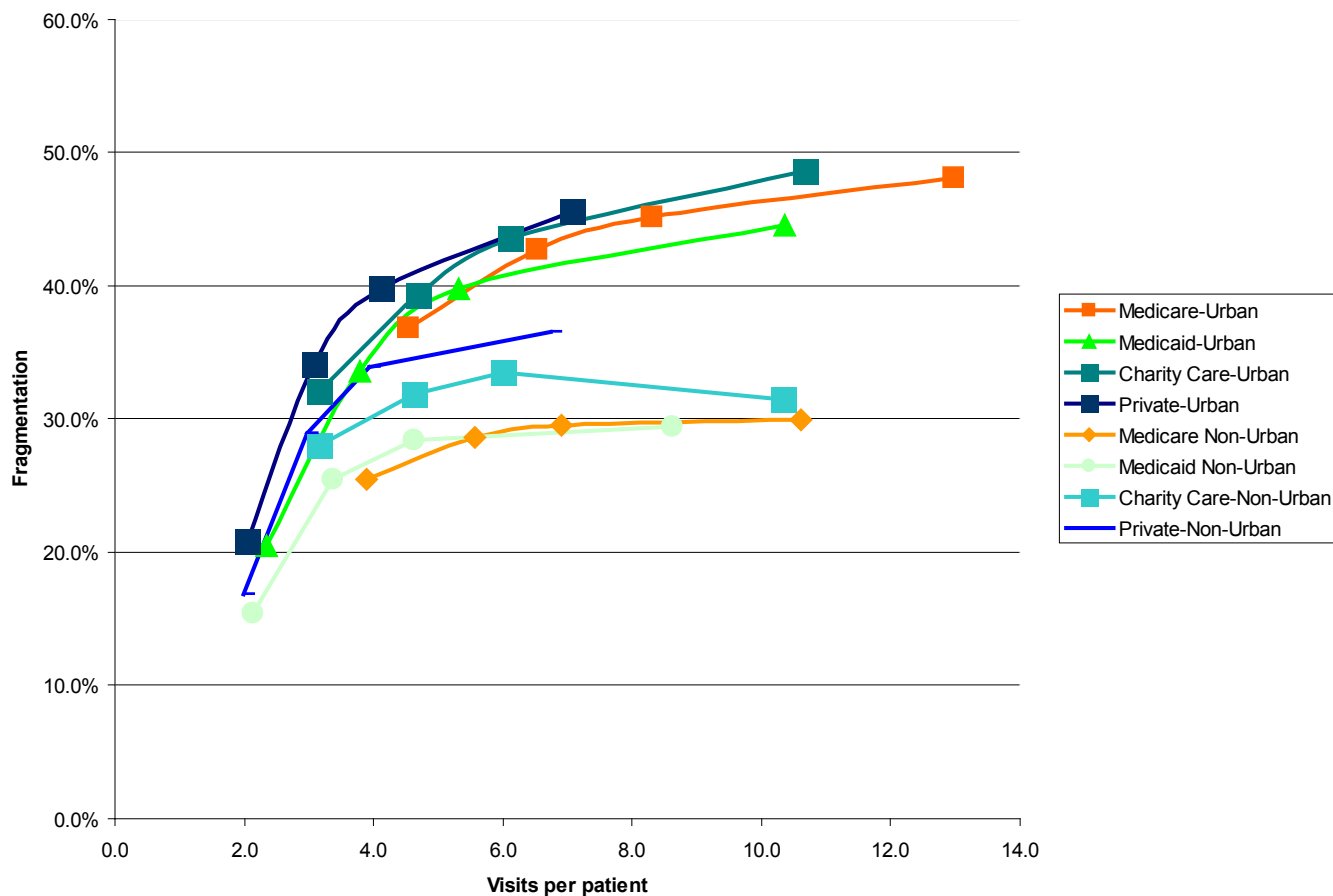


Source: 2008-9 New Jersey Hospital Discharge Data, top 1% of utilizers

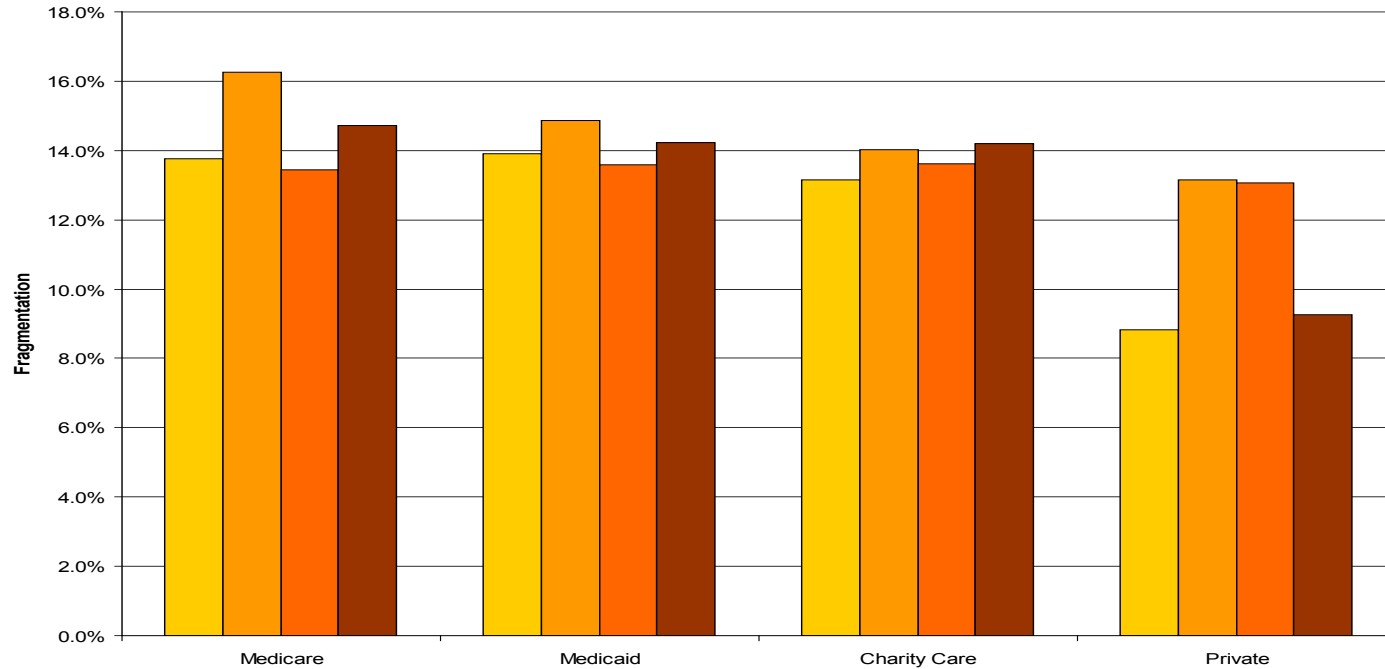
Fragmentation and utilization by payer



Fragmentation by utilization and urbanization



Q: What percent of visits would be missed in a one-hospital urban ACO?
 A: Approximately 14% - less for privately insured.



Summary

- Utilization higher in urban areas for Medicare and Medicaid
- Fragmentation considerably higher in urban areas, for all payer categories.
- Little variation in concentration – by urban residence or payer category.
- Fragmentation related to utilization and urban residence.
- Proximity to hospitals may affect utilization behavior. Urban ACOs appear to have more incentive to include multiple hospitals.

Implications for ACOs

- A one-hospital urban ACO would miss about 14% of inpatient visits in the top 25% of the utilization distribution, for all payer categories other than private.
- Impact of missing these visits must be weighed against anti-trust concerns.

