

Beyond shopping: How can price transparency improve value-based purchasing?

Anna D. Sinaiko, Pragma Kakani and
Meredith Rosenthal

October 22, 2019

Can we spend less in health care without losing value?

Spending = Price x Quantity

Many policy strategies use price information to improve value

Target individuals:

- Decision support tools
- Benefit design

Target providers:

- Bundled payments
- Price regulation

Analysis of novel price dataset from Center for Health Information and Analysis (CHIA)

- Transparency a key strategy to reduce spending growth in MA
- CHIA has built both consumer-facing and “wholesale” price information assets
- Median fee-for-service prices for 291 outpatient services in Massachusetts during 2015
- Every insurer-provider-service paid price
 - N claims per price at least 15 (11 for maternity)
 - 8 commercial payers (75.4% commercial market)
 - 12,549 healthcare providers
- We use the wholesale data to examine variation in prices by geography, payer and provider

Measures of Price and Variation

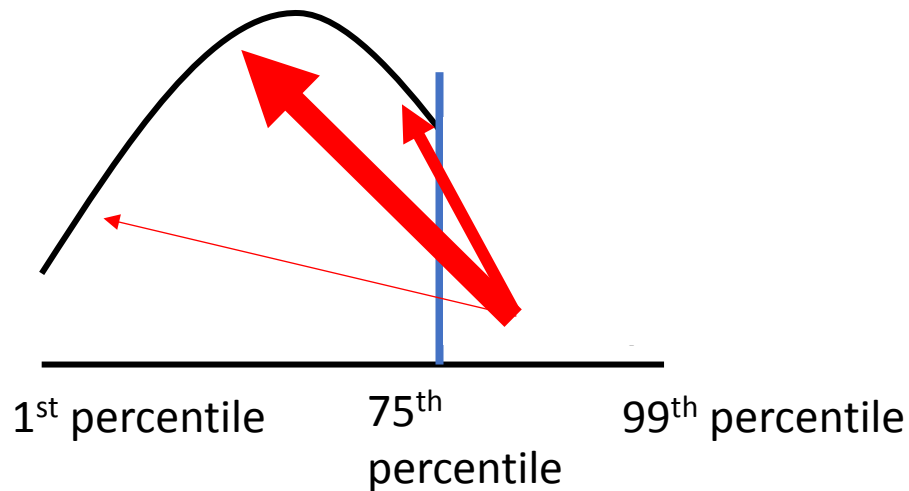
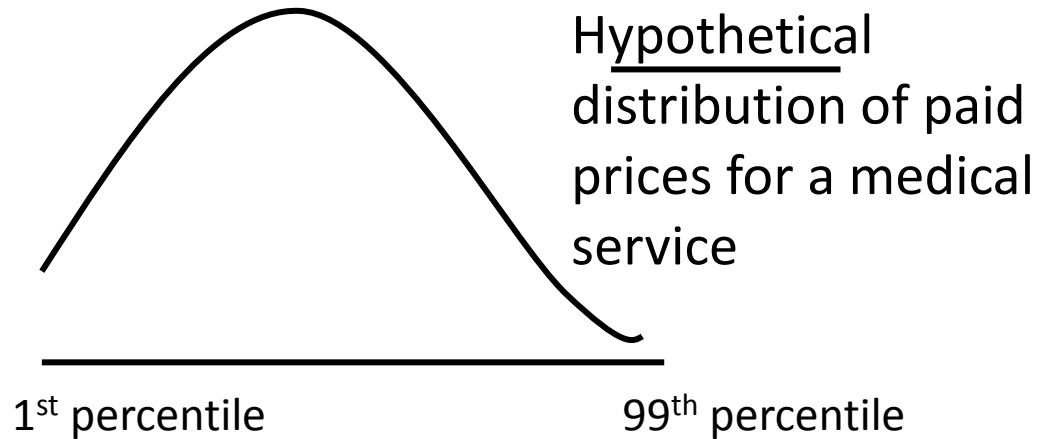
- Service (e.g., CPT-code) level price
 - Analyzed variation using Coefficient of Variation
 - Compared acute hospital prices vs other providers
- Estimated "implied price" for each provider

$$\text{Implied Price}_j = \frac{\sum_{s=1}^S \sum_{i=1}^I p_{isj} \times q_{isj}}{\sum_{s=1}^S \bar{p}_s \times q_{sj}}$$

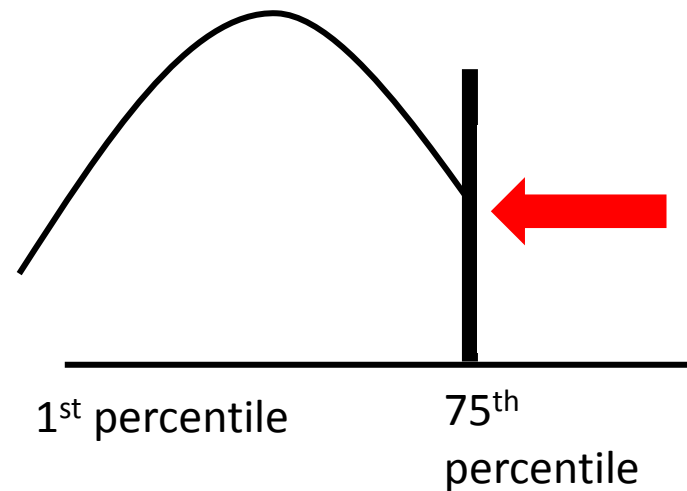
Where j indexes the provider, i indexes the insurer, and s indexes medical services

- Aggregated by geography (HSA), and provider deciles

Two stylized policy simulations



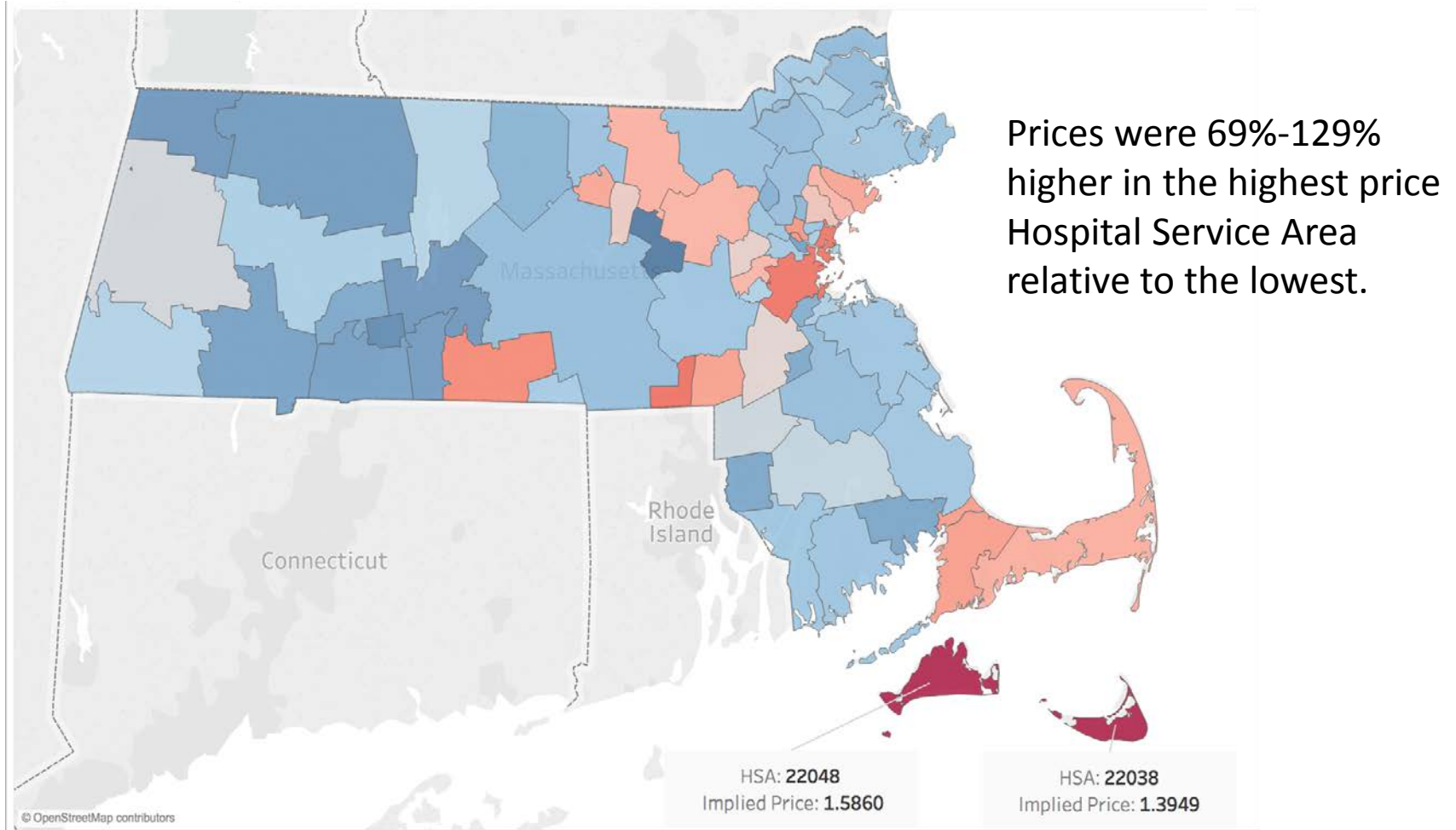
“Steering”



“State Price Ceiling”

Geographic Variation within state

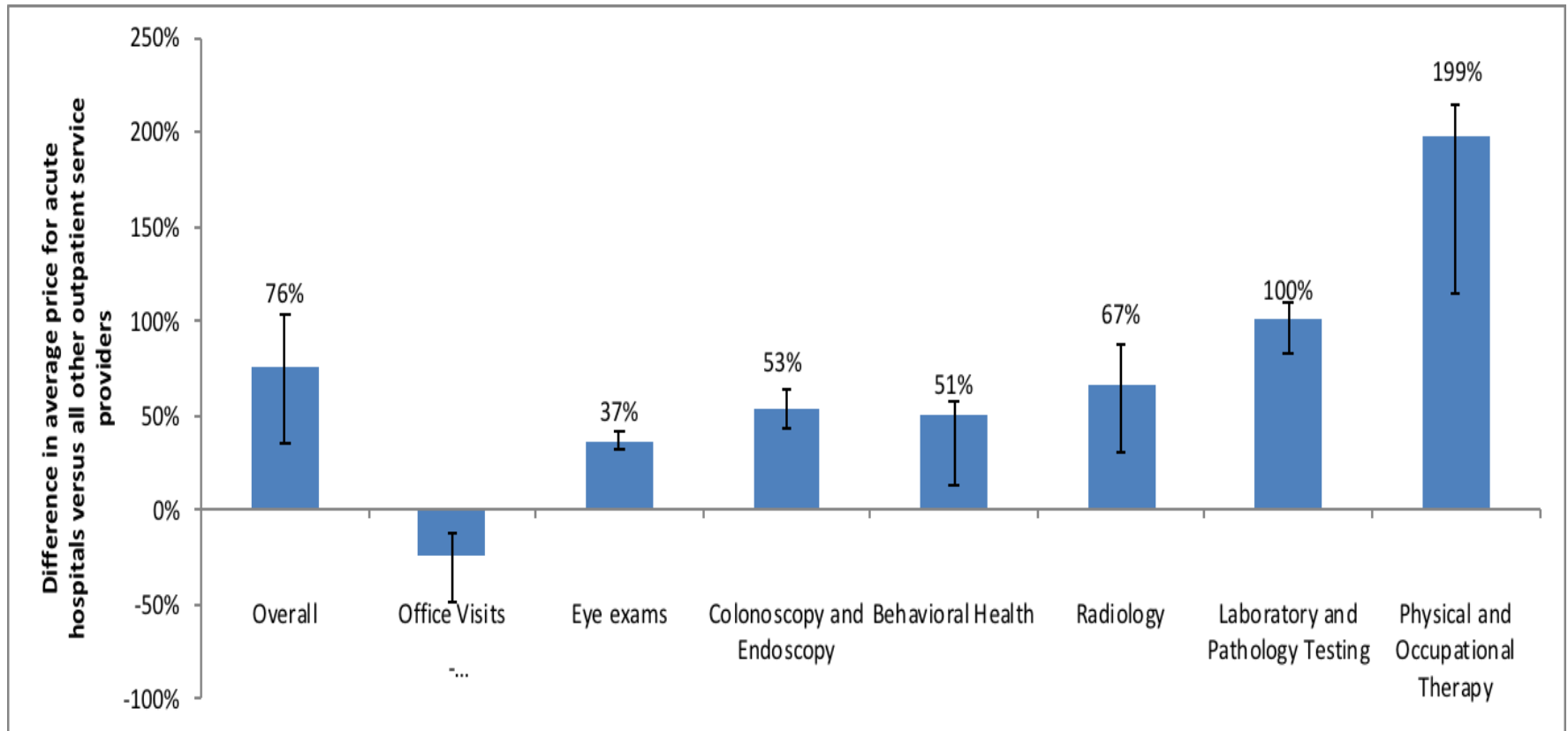
Implied Price by Hospital Service Area



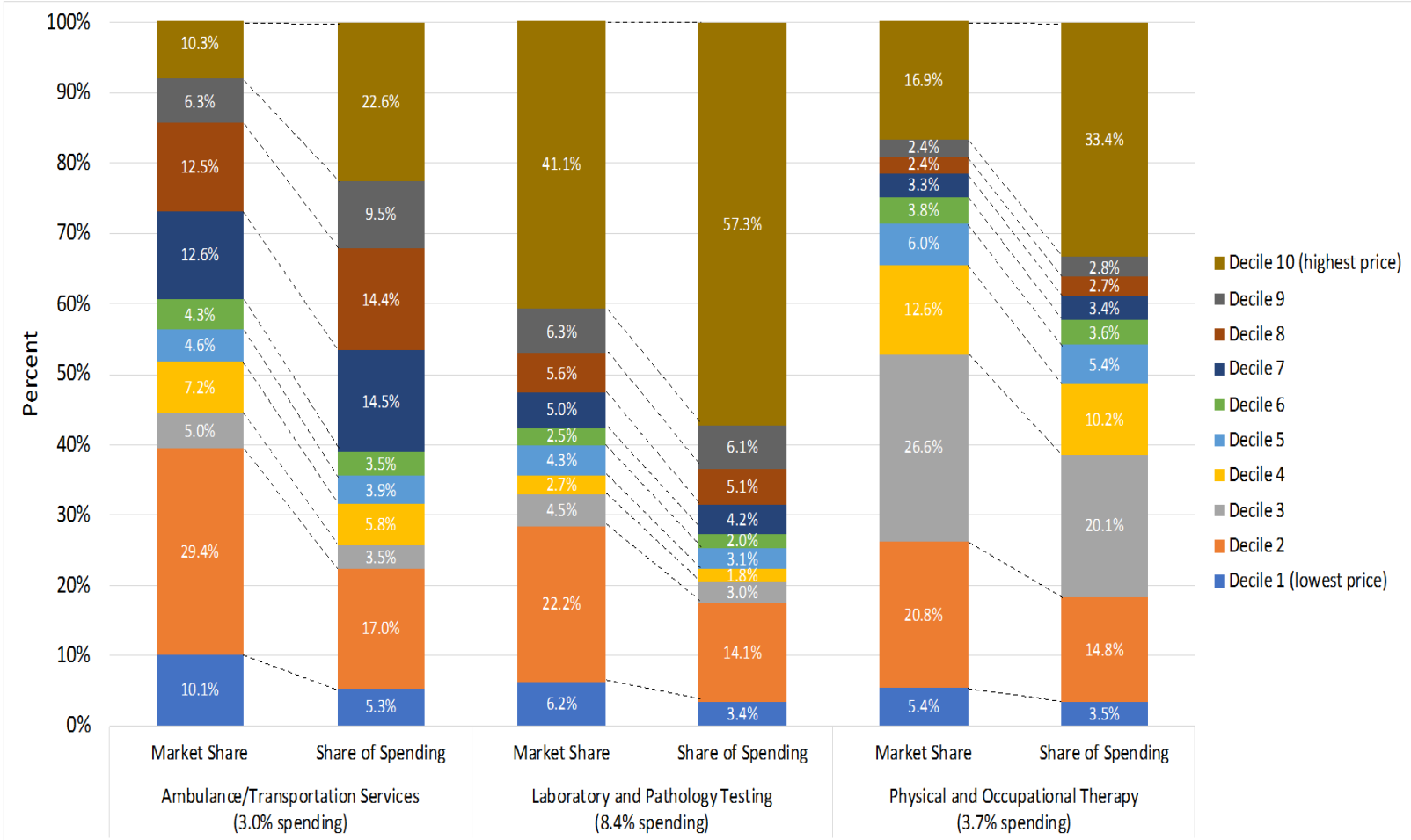
How much variation per service?

	Across Provider-insurer prices		Across Providers		Across Insurers	
	Mean provider-insurer price (SD)	Mean Coefficient of variation (SD)	N providers	Mean Coefficient of variation (SD)	N payers	Mean Coefficient of variation (SD)
Overall	177.68 (355.20)	0.50 (0.22)	12549	0.42 (0.22)	8	0.30 (0.51)
Service Line						
Ambulance/Transportation Services	654.15 (760.08)	0.79 (0.26)	255	0.75 (0.28)	8	0.34 (0.16)
Behavioral Health	88.62 (36.60)	0.35 (0.19)	7146	0.32 (0.21)	8	0.16 (0.11)
Colonoscopy and Endoscopy	2097.17 (888.71)	0.31 (0.05)	91	0.29 (0.04)	8	0.24 (0.11)
Emergency Department Visits	537.63 (351.89)	0.49 (0.10)	67	0.32 (0.07)	8	0.32 (0.07)
Eye exams	154.49 (86.59)	0.50 (0.07)	714	0.31 (0.06)	8	0.28 (0.04)
Laboratory and Pathology Testing	26.86 (26.89)	0.64 (0.12)	713	0.54 (0.11)	8	0.34 (0.13)
Maternity*	4132.35 (990.94)	0.24 (0.01)	99	0.20 (0.00)	4	0.16 (0.01)
Office Visits	164.81 (84.44)	0.38 (0.23)	4034	0.29 (0.17)	8	0.26 (0.35)
Physical and Occupational Therapy	42.96 (38.69)	0.70 (0.31)	1392	0.69 (0.36)	8	0.96 (1.89)
Radiology	471.11 (532.57)	0.42 (0.17)	518	0.34 (0.19)	8	0.22 (0.20)

Variation: Acute hospitals vs other providers



Variation: Implications for Spending Across 3 Service Types



Potential savings from “steering” and “price ceiling” stylized policies

<i>Policy Simulation:</i>	Steer patients to lower cost providers*	
	Savings as a percent of service category spending	Savings as percent of total spending
Overall		12.8%
By service line		
Ambulance/Transportation Services	23.4%	0.5%
Behavioral Health	7.3%	0.7%
Colonoscopy and Endoscopy	15.9%	0.5%
Emergency Department Visits	24.2%	0.5%
Eye exams	15.8%	0.6%
Laboratory and Pathology Testing	27.5%	1.3%
Maternity	1.7%	0.0%
Office Visits	9.2%	5.3%
Physical and Occupational Therapy	22.7%	1.1%
Radiology	21.0%	2.3%

Notes: *Simulation models shifting patients from providers paid prices above the 75th percentile price within HSA and within insurer to other providers. Only includes services rendered by at least 5 providers within HSA within insurer.

Limitations

- Outpatient service prices only here
- No data on quality
- Simulations don't account for all considerations important for policy:
 - Incentives for innovation?
 - Network sufficiency

Policy Implications

- Transparency is not just for consumers – payers and regulators may be able to use price information more effectively: through steering tools and other policies
- For what services can we successfully steer patients?
 - PT/OT?
 - Outpatient Labs?
 - Ambulances?
- More analysis could increase our understanding of the price differences – and which ones are associated with the greatest opportunities to increase value

Additional questions and comments:

mrosenth@hsph.harvard.edu