

Healthcare Costs in Maine

An Analysis of Price Disparities and What We Should Do About Them

Executive Summary

As health care prices continue to rise and many Mainers face high out-of-pocket medical bills, consumers are increasingly attentive to cost disparities between different medical providers.

Recently, several states – including Maine – have taken steps to empower consumers to comparison shop for health care services. Last year, the Maine Health Data Organization launched a price transparency website that allows patients to access cost information for over 200 procedures from more than 170 facilities. This data has made possible an unprecedented analysis of the vast cost variation between different providers, based on factors like hospital size, location, and patient satisfaction figures.

The findings of this study reveal that:

- Health care cost variation in Maine, like the rest of the United States, can be enormous, sometimes representing 5-fold differences or thousands of dollars.
- On average, medical care is most expensive in small, rural hospitals located in northern or eastern Maine, while medium-sized urban hospitals in southern Maine offer the most affordable care.

Recommendations include:

- Expand the number of medical centers and procedures listed on CompareMaine.org to provide consumers with more complete and accurate health care information.
- Enact right-to-shop legislation to reward patients for seeking low-cost health care.
- Enable enrollees who elect to receive medical care for less than their carrier's average cost from an out-of-network provider to enjoy the same cost sharing policies as if the services had been rendered by an in-network provider.

Introduction

In 2014, health care spending in the United States totaled \$3.03 trillion, a 17 percent increase since 2010.¹ These expenditures include private health insurance payments, government programs, and personal out-of-pocket expenses. In Maine, average annual health care spending per person reached \$8,521 in 2009, with total aggregate expenditures surpassing \$11 billion.² In 2014, Maine ranked 11th nationally in terms of personal health care spending per capita.³ Meanwhile, health insurance premiums have risen sharply. In the individual market in Maine, average monthly premiums per person were \$335.61 in 2013, 43 percent more than the national average and a 12 percent increase since 2010.⁴

In recent years deductibles have also remained high. Data released by the Maine Bureau of Insurance in 2015 indicated that more than 21 percent of those with individual market coverage purchased bronze metal plans, which typically have deductibles of at least \$5,000. According to a report released in 2014 by the Maine Rural Health Research Center, "growth in privately purchased high-deductible plans is likely given the continuing rise in health insurance costs and current market and policy trends." 5

As a result, Mainers are being forced to shoulder ever-growing medical costs.⁶ Out-of-pocket expenses for premiums and deductibles doubled between 2003 and 2013 and now comprise nearly 9.6 percent of household income, according to data from the Commonwealth Fund.⁷ And with median household incomes remaining largely stagnant,⁸ consumers are becoming more attentive to the cost of health care procedures, especially price disparities between different providers.⁹

Unfortunately, in most states, patients have little access to cost information before agreeing to a procedure or treatment, allowing hospitals to set exorbitant prices that would be unsustainable in a more competitive, transparent market. Examples are plentiful of vast price disparities between providers – even those within close proximity. Mercy Hospital in Portland, Maine, for instance, offers precancerous skin growth removal for an average of \$117. Less than a mile away, Maine Medical Center costs \$551. At Eastern Maine Medical Center in Bangor, Maine, knee replacement surgery typically costs \$47,233, while the same procedure at Saint Joseph's Hospital – a six-minute drive away – costs only \$35,827.

More than decade ago, Maine lawmakers took steps to enhance price transparency in health care. Since 2003, the Maine Health Data Organization (MHDO) has managed an all-payer claims database (APCD) which contains financial medical information derived from medical and pharmacy insurance claims from both public and private payers. In 2015, the MHDO, in collaboration with the Maine Quality Forum and the Centers for Medicare and Medicaid Services, launched CompareMaine.org, a website that offers pricing information for over 200 procedures and more than 170 facilities across the state of Maine.

Relying on this newly released data, this report contains an analysis of health care cost variation across the state of Maine.

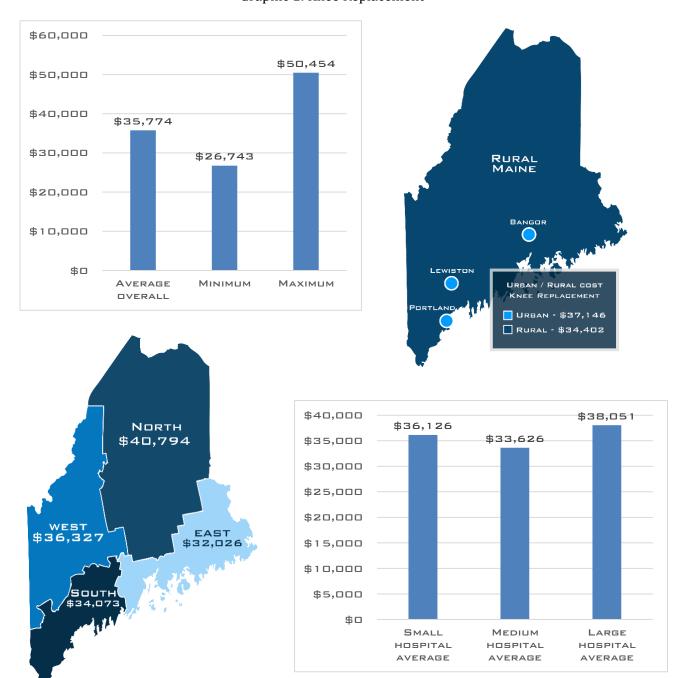
Cost Analysis

This section presents cost information for different medical procedures. Data is broken down on the basis of geography, population density, and hospital size.

The six procedures analyzed below represent a variety of medical specialties – including surgery, gynecology, hematology, and radiology – and highlight some of the substantial price differences between medical providers in Maine.

Knee Replacement

The estimate in Graphic 1 is for a 60-day episode of care, which includes related medical services from 30 days before and 30 days after the surgery such as office visits, pre- and post-op appointments, and physical therapy. It also includes all services related to the surgery such as surgeon fees and anesthesia.

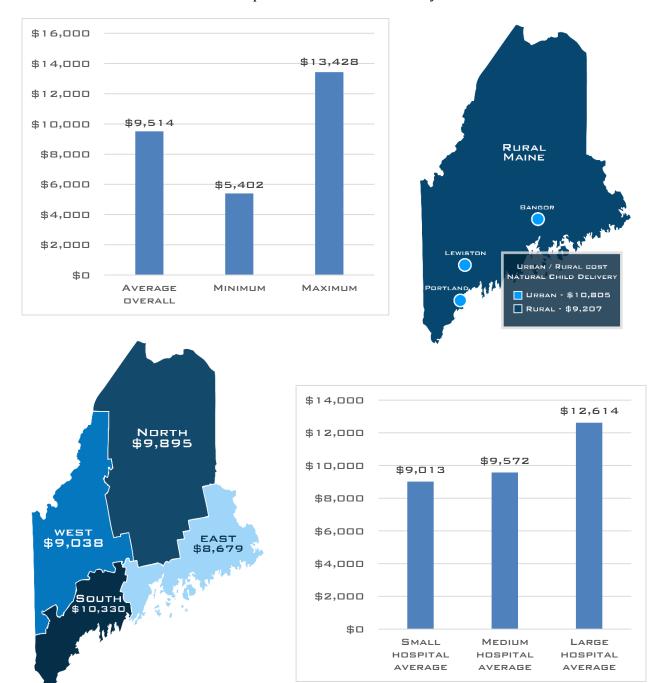


Graphic 1: Knee Replacement

^{*} Only one hospital in eastern Maine offers knee replacement surgery.

Natural Child Delivery

The estimate in Graphic 2 is for a 60-day episode of care, which includes related medical services from 30 days before and 30 days after the delivery such as office visits, the hospital stay, and postnatal care. It also includes all services related to the delivery such as hospital and physician services.

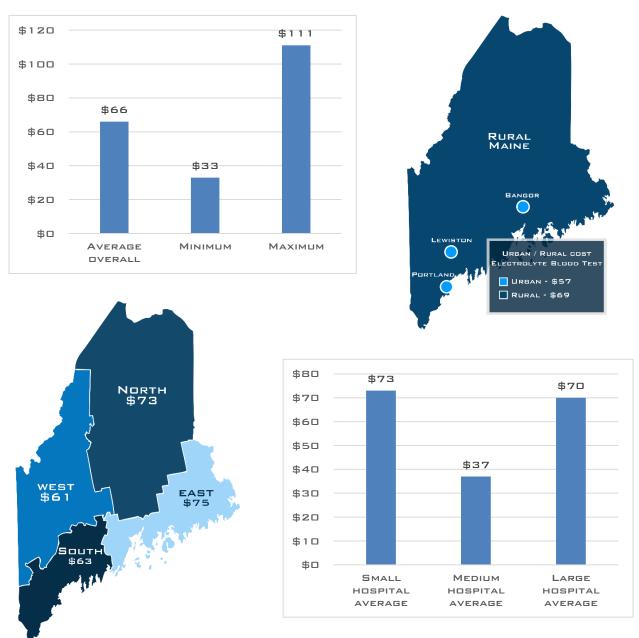


Graphic 2: Natural Child Delivery

Blood Test for Electrolytes

The estimate in Graphic 3 includes the fees to collect, ship, and evaluate the specimen.

Graphic 3: Blood Test for Electrolytes



MRI Scan of Brain

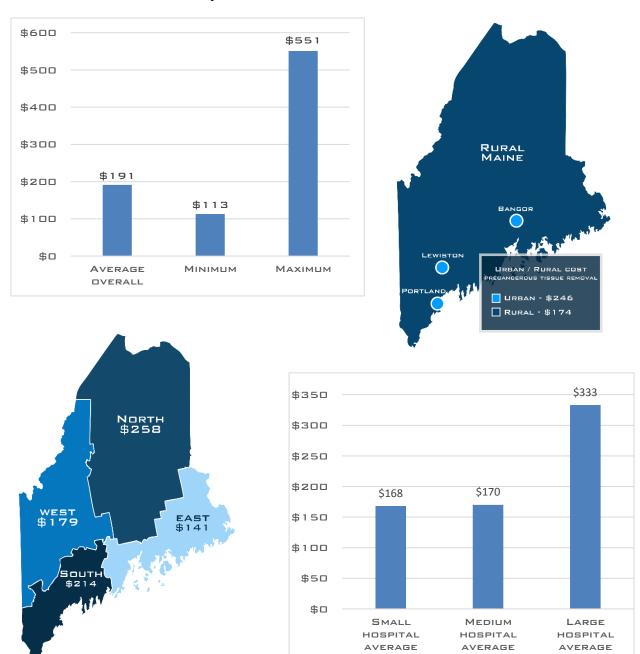
Imaging procedure cost estimates in Graphic 4 include the cost of taking the image and the cost of interpreting it.

\$2,500 \$1,909 \$2,000 \$1,426 \$1,500 RURAL MAINE \$1,000 \$778 \$500 \$0 AVERAGE МІМІМІМ Махімим OVERALL ■ URBAN - \$1,232 RURAL - \$1,475 \$1,518 \$1,600 \$1,459 NORTH \$1,443 \$1,400 \$1,200 \$962 \$1,000 \$800 EAST \$1,485 \$600 \$400 \$200 \$0 SMALL МЕПІШМ LARGE HOSPITAL HOSPITAL HOSPITAL AVERAGE AVERAGE AVERAGE

Graphic 4: MRI Scan of Brain

Removal of Precancerous Tissue

The estimate in Graphic 5 is for a 60-day episode of care, which includes related medical services from 30 days before and 30 days after the surgery such as office visits, pre- and post-op appointments, and physical therapy. It also includes all services related to the surgery such as surgeon fees and anesthesia.



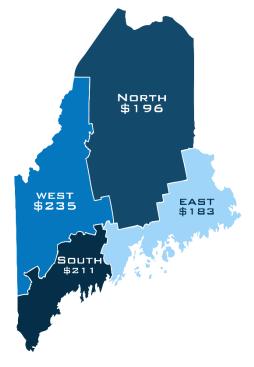
Graphic 5: Removal of Precancerous Tissue

Physical Therapy Evaluation

Graphic 6: Physical Therapy Evaluation







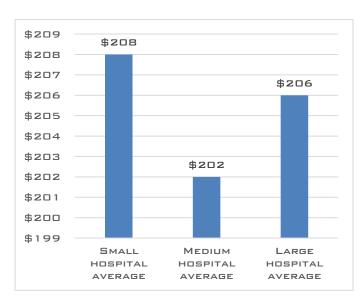


Table 1 shows how much different categories of hospitals cost for health care services compared to the total hospital average, based on cost data for the 20 most common procedures performed in Maine. Small hospitals – such as Aroostook Medical Center, which is located in Presque Isle, Maine, and contains 58 beds – generally demand 3.51 percent more than the state-wide hospital average, while medium-sized hospitals like Central Maine Medical Center in Lewiston, Maine, which is equipped with 190 beds, offer services at 18.07 percent less than the state average. Similarly, urban hospitals like Eastern Maine Medical Center in Bangor, Maine, typically cost 8.76 percent less than the state average and rural hospitals – such as Penobscot Bay Medical Center in Rockport, Maine – cost 1.95 percent more.

Table 1: Cost Disparities by Variable

Category	Average cost relative to hospital average
Small hospitals	+3.51%
Medium hospitals	-18.07%
Large hospitals	-6.30%
Northern region hospitals	+12.02%
Southern region hospitals	-9.83%
Western region hospitals	-7.88%
Eastern region hospitals	+2.79%
Urban hospitals	-8.76%
Rural hospitals	+1.95%

^{**} Note: Costs are averages of the 20 most common procedures in Maine – they are meaningful only as means of comparison.

Correlational analyses were conducted to examine the relationship between medical costs and a number of relevant variables including patient satisfaction, the prevalence of infections, hospitals size, and the number of patient visits. In an open market where costs are transparent and consumers are informed, patients tend to favor hospitals with low costs, excellent service, and few serious complications.

In Table 2, negative numbers indicate that price is inversely correlated with the variable under scrutiny. In other words, as one increases the other declines. The magnitude of the number reflects the strength of the correlation. Larger numbers represent a closer relationship than smaller numbers. Decimals between ± 0.30 and ± 0.69 indicate a moderate correlation, while results between ± 0.00 and ± 0.29 indicate a weak correlation.

Table 2. Correlation Analysis

Variables	Correlation to price
Number of services performed	-0.332
Number of hospital encounters	-0.254
Number of hospital beds	-0.222
Number of nurses on staff	-0.212
C. difficile infection rate	-0.118
Percentage of patients who would recommend the hospital to others	-0.080
Percentage who rated the hospital a 9 or 10	-0.032
Patient satisfaction	-0.096

Several important conclusions can be drawn from this data.

First, medical costs and the number of number of services performed by a given hospital have a moderate negative relationship, meaning that as prices rise the number of services performed generally declines. A similar, though weaker, trend exists with respect to the number of hospital encounters (which represent the number of patient visits). This suggests that consumers are poorly motivated to shop for affordable care.

Second, the number of hospital beds is also negatively correlated with health care costs, as is the number of nurses. Though weak, this data indicates that larger facilities, on average, offer lower prices.

Third, the exceptionally weak correlation between health care costs and *c. difficile* infection rates – the only consistently available indication of service quality in Maine hospitals – suggests that higher prices don't necessarily mean better care, a finding corroborated by many other studies.^{11,12}

Fourth, there is virtually no relationship between costs and patient satisfaction ratings, dispelling the myth that expensive providers offer more comfortable accommodations and guarantee a superior patient experience. Absent robust transparency that allows consumers to easily conduct cost/benefit analyses, hospitals aren't adequately financially penalized for poor service or rewarded for outstanding care.

These trends point to a market where consumers – lacking accurate information about quality and cost – aren't making optimal decisions. Patients often choose to receive care in hospitals with high prices, poor safety standards, and low patient satisfaction ratings. Conversely, hospitals that offer affordable services and a pleasant patient experience aren't attracting a large amount of business. One would expect hospitals with high patient satisfaction and low rates of serious complications to have higher prices for their exceptional services. Similarly, hospitals with poor patient ratings and high error rates would be expected to have low prices to attract customers despite the sub-par care they provide.

Based on the average cost of the 20 most common medical procedures in Maine, Table 3 reveals how Maine's hospitals compare to the average state-wide hospital costs. York Hospital, for instance, demands – on average – 32.24% less for a procedure than the average hospital.

Table 3: Hospital Rankings

Rank	Hospital	Average Price Relative to Hospital Average	
1	York Hospital	-32.24%	
2	Central Maine Medical Center	-27.51%	
3	MaineGeneral Medical Center	-20.49%	
4	Millinocket Regional Hospital	-17.65%	

Table 3: Hospital Rankings (cont.)

· · · · · · · · · · · · · · · · · · ·	Average Price Relative to Hospital Average
r's Regional Medical	-15.97%
n Memorial Hospital	-15.62%
Hospital	-14.69%
on-Fairview General	-14.54%
1	
n Maine Health Care	-14.11%
cot Bay Medical Center	-13.08%
ıst Hospital	-11.92%
cook Valley Hospital	-11.32%
n Hospital	-7.94%
egional Hospital	-5.09%
Aedical Center	-4.97%
d Hospital	-4.22%
Coast Memorial	-3.80%
n Maine Medical Center	-0.15%
Hospital	-0.09%
ll Memorial Hospital	+1.49%
oh Hospital	+4.03%
Desert Island Hospital	+6.13%
ast Community Hospital	+6.44%
Maine Medical Center	+6.57%
cot Valley Hospital	+7.72%
County General Hospital	+8.60%
legional Hospital	+13.77%
A. Dean Memorial	+13.92%
l and Nursing Home	
Health	+17.03%
n Regional Hospital	+24.01%
ostook Medical Center	+34.82%
ns Memorial Hospital	+38.81%
edical Center	+52.06%
	on-Fairview General I m Maine Health Care cot Bay Medical Center ast Hospital cook Valley Hospital m Hospital degional Hospital coast Memorial m Maine Medical Center d Hospital coast Memorial m Maine Medical Center dospital l Memorial Hospital cost Island Hospital ast Community Hospital maine Medical Center cot Valley Hospital county General Hospital l A. Dean Memorial l and Nursing Home Health m Regional Hospital costook Medical Center as Memorial Hospital

^{*}An description of how these rankings where determined is provided in the Methodology section.

Methodology

The cost data analyzed in this report is based on more than 10 million claims from 47 health insurance plans from January 2014 through March 2015 drawn from the state of Maine's all-payer claims database (APCD) managed by the Maine Health Data Organization. Claims from Medicaid and Medicare recipients were excluded. Data from psychiatric hospitals were also excluded.

Reported costs are aggregate figures – they represent the amount paid by insurance companies as well as the patient's out-of-pocket contribution through deductibles, copays, and coinsurance.

When more than one facility provides a service, such as when a blood test involves both a hospital and laboratory, the aggregate prices charged by both facilities are assigned to the facility responsible for the largest part of the bill.

In order to make regional cost comparisons, Maine was divided into four geographic areas – northern, southern, western, and eastern – based on county groupings (Table 4).

Table 4. Regional categorization by county

Northern region	Southern region	Western region	Eastern region
Penobscot,	York, Cumberland,	Oxford, Franklin, and	Knox, Waldo,
Piscataquis, and	Androscoggin,	Somerset	Hancock, and
Aroostook	Sagadahoc, and		Washington
	Lincoln		_

Maine's three cities with populations in excess of 30,000 residents – Portland, Lewiston, and Bangor – were designated as urban areas. All other regions of the state were considered rural.

Small hospitals were defined as those with fewer than 100 beds; medium hospitals have 100-249 beds; large hospitals have more than 250 beds.

Average hospital costs were determined by calculating how much a given hospital was priced above or below the state-wide hospital average for each of the top 20 services (measured by volume) in Maine. The percentages above or below the mean for each of the 20 services were averaged to yield an overall measure of relative cost. These values were used in generating both Table 1 and Table 3. It's important to note, however, that the top 20 services – though informative – don't constitute the totality of cost data; analyzing a different set of procedures could reveal different rankings and trends.

Conclusion and Recommendations

In general, small, rural hospitals in northern and eastern Maine offer the most expensive care, while medium-sized urban hospitals in the southern and western areas of the state are the most price-competitive. Between minimum and maximum prices for a given service, wide variation – sometimes approaching 5-fold disparities – exists. Average prices have a weak correlation with relevant variables like patient satisfaction, infection rates, and hospital size, suggesting that active consumer engagement in health care shopping is low.

This analysis builds on previous work highlighting broad price variation between hospitals in Maine. A 2009 study conducted on behalf of the Maine Quality Forum found "significant variation in per-capita spending...for both inpatient and outpatient care." In 2013, a report by Onpoint Health Data documented payment variance as high as 27.4 percent above the statewide average of a hospital's peer group. These results were consistent with calculations derived from 2008 and 2010 data.

Importantly, while health care utilization (volume of services) is more significant than prices per service in explaining total cost variation among Medicare beneficiaries, researchers have found that price discrepancies among the privately insured are a major driver of higher health care spending. ¹⁶ As a result, limiting price variation between

hospitals could have a dramatically positive effect on Maine's privately insured and uninsured populations.

The massive cost variation revealed in this report has been well-documented across the country. A Yale study published last year found that hospital prices often vary by a factor of ten or more across geographic regions. In 2013, for example, the Centers for Medicare and Medicaid Services released data showing a joint replacement in New York City costs anywhere between \$15,000 and \$155,000. The cost of a pneumonia treatment in Los Angeles can vary by as much as \$100,000 between providers.¹⁷

In recent years, though substantial resources have been devoted to identifying and analyzing price variation, less research has focused on the underlying factors that drive disparities. Nonetheless, it is clear that a number of factors contribute to health care price variation. Geographic differences in wages and labor costs – one of the largest expense categories for hospitals – are important considerations. Generally, higher quality of care – and the investments in time and equipment it requires – correlates with higher prices. Rural medical centers that aren't able to benefit from economies of scale generally have higher prices; they must maintain basic staffing, heat, electricity, and security while shifting the cost to the relatively few patients they serve.

Although many reasons can lead a hospital to have justifiably higher prices, non-competitive health care markets – caused by either a scarcity of medical providers or a lack of informed consumers – are one of the primary causes of wide cost differences. A recent study reported that "hospitals located in monopoly markets have prices that are about 15.3 percent higher than hospitals located in markets with four or more providers." The broad consensus among health policy analysts is that the absence of price transparency contributes significantly to price variation. A brief from the Center for Studying Health System Change noted that providing "information to enrollees about differences in what they will have to pay when using different providers [clearly has a role to play in generating savings]." A report by the Congressional Research Service found that "price transparency leads to lower and more uniform prices, a view consistent with predictions of standard economic theory." ²¹

Through the creation of CompareMaine.org, a publically available website that provides a wide array of pricing information on dozens of hospitals and clinics throughout the state of Maine, policymakers have taken an important step in making health care costs more transparent. However, the website attracts only 550 visitors per week, a tiny fraction of the number of people receiving medical care. Policymakers should seek to expand the number of procedures listed online – for example, the website currently lacks data about many surgical procedures – and raise awareness of its existence.

Several studies suggest, however, that price transparency alone is insufficient to motivate significant changes in consumer behavior. Only a small percentage of health insurance enrollees utilize their carrier's cost comparison tool (when such a tool is even available). According to a recent poll by the Kaiser Family Foundation, only 6% of consumers compare hospital prices.²³ Another survey conducted by Catalyst for Payment Reform found that

only 2% of Americans with health insurance use cost estimator tools before selecting a provider.24

In addition to robust price transparency, policymakers should provide incentives to motivate patients to shop for quality, affordable health care. Around the country, companies are increasingly offering their employees financial incentives for seeking lowcost medical services, resulting in substantial savings. A Chicago-based company called HealthEngine, for instance, contracts with self-insured employers to offer their employees complete pricing and quality information for a vast number of health services; employees enjoy up to 60% of the cash savings between reimbursed costs and the actual costs.²⁵ A similar company, Vitals, has seen a 90% increase in transparency program usage since introducing incentive rewards to one of its clients, New Hampshire public employees. From 2011 to 2014, more than 60% of Vitals members earned cash incentives for health care shopping, averaging \$669 in savings each time the program is utilized.²⁶

Informed consumers motivated by financial incentives are the best antidote to the substantial price variation between Maine hospitals. Drawing on the successful experiences of companies that have incorporated comparison shopping rewards into their health plans, lawmakers in Augusta should pass "right-to-shop" legislation to reward consumers for seeking low-cost medical services. The health care industry would likely respond by dropping prices and enhancing quality, and unnecessary price variation would narrow as competition flourished.

Allowing patients who choose to receive medical care for less than their carrier's average cost from an out-of-network provider to enjoy the same cost sharing policies as if the services had been provided by an in-network provider would also encourage robust competition in the health care market by supporting high-quality, affordable independent practitioners and creating more options for consumers.

¹ Kaiser Family Foundation (2015). Health Spending Explorer. Available at: http://www.healthsystemtracker.org/interactive/health-spending-explorer/?display=U.S.%2520%2524%2520Billions&service=Hospitals%252CPhysicians%2520%2526%2520Clinics%252CPrescription%2520Drug

² Stone, M. (2013). Why is Maine 5th in US for health care spending? Available at: http://bangordailynews.com/2013/04/26/opinion/why-is-maine-5th-in-us-for-health-care-spending/ ³ Bureau of Economic Analysis (2015). Per capita personal consumption expenditures. Available at: http://bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=10&isuri=1&7003=2&7035=-1&7004=x&7005=16&7006=xx&7036=1&7001=62&7002=6&7090=70&7007=-1&7093=levels

Kaiser Family Foundation (2013), Average monthly premiums per person in the individual market. Available at: http://kff.org/other/state-indicator/individual-premiums/?state=ME

⁶ Lenardson, J., Ziller, E., Cobum, A. (2014). High deductible health insurance plans in rural areas. Available at: http://muskie.usm.maine.edu/Publications/rural/High-Deductible-Insurance-Plans-Rural.pdf ⁶ Murphy, E. (2015). Mainers spent more last year, but with their usual frugality, new federal figures show. Available at: http://www.pressherald.com/2015/12/01/mainers-spent-more-in-2014-than-in-previous-year/

Kutscher, B. (2015). Consumers demand price transparency, but at what cost? Available at: http://www.modernhealthcare.com/article/20150623/NEWS/150629957

⁸ Department of Numbers (2014). Maine household income. Available at: http://www.deptofnumbers.com/income/maine/
⁹ Morrison, I. (2015). The American Health Care Consumer. Available at: http://www.hhnmag.com/articles/3773-the-american-health-care-consumer

^o The Commonwealth Fund (2012). Health care price transparency: can it promote high-value care? Available at: http://www.commonwealthfund.org/publications/newsletters/quality-matters/2012/april-may/in-focus

¹¹ Kaiser Family Foundation (2009). Explaining health care reform: How do health care costs vary by region? Available at: https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8030.pdf
12 Fisher, E., Goodman, D., Skinner, J., Bronner, K. (2009). Health care spending, quality, and outcomes. Available at: https://www.dartmouthatlas.org/downloads/reports/Spending_Brief_022709.pdf
13 Health Dialog (2009). All-payer analysis of variation in healthcare in Maine. Available at: https://mhdo.maine.gov/_externalReports/HDAS_MQF_Report_Final050609.pdf

A Onpoint Health Data (2013). Hospital cost comparison for hospital tiered benefit. Available at: https://mhdo.maine.gov/_externalReports/OnpointHospitalCostReportIan2013.pdl

Cooper, Z., Craig, S., Gaynor, M., Reenen, J.V. (2015). The price ain't right? Hospital prices and health spending and on the privately insured. Available at:

http://www.healthcarepricingproject.org/sites/default/files/pricing_variation_manuscript_0.pdf

17 Young, J., Kirkham, C. (2013). Hospital prices no longer secret as new data reveals bewildering system, staggering cost differences. Available at: http://www.huffingtonpost.com/2013/05/08/hospital-prices-cost-

American Hospital Association (2009). Geographic variation in health care spending: A closer look. Available at: http://www.aha.org/research/reports/tw/twnov09geovariation.pdf

¹⁹ Cooper, Z., Craig, S., Gaynor, M., Reenen, J.V. (2015). The price ain't right? Hospital prices and health spending and on the privately insured. Available at http://www.healthcarepricingproject.org/sites/default/files/pricing_variation_manuscript_0.pdf

White, C., Bond, A., Reschovsky, J. (2013). High and varying prices for privately insured patients underscore hospital market power. Available at: http://www.nihcr.org/price-Variation

Nustin, D.A., Gravelle, J. (2007). Does price transparency improve market efficiency? Implications of empirical evidence in other markets of the health sector. Available at: https://www.fscorg/sgp/crs/secrecy/RL34101.pdf

Lawlor, J. (2016). Website gives consumers tools to compare medical procedures. Available at: http://www.pressherald.com/2016/03/18/website-gives-consumers-tools-to-compare-medical-procedures/

kaiser Family Foundation (2015). Kaiser Health Tracking Poll: April 2015. Available at: http://kff.org/health-costs/poll-finding/kaiser-health-tracking-poll-april-2015/

²⁴ Brino, A. (2014). Demand grows for healthcare cost comparison, but marketing struggles. Available at: http://www.healthcarepayernews.com/content/demand-grows-healthcare-cost-comparison-marketing

Johnson, D. (2016). Manipulating demand: Paying patients for lower-cost care. Available at: http://dsighthealth.com/manipulating-demand-paying-patients-for-lower-cost-care/ 26 Graybill, R. (2015). Testimony to the Maine Insurance and Financial Services Committee. Available at: http://www.mainelegislature.org/legis/bills/getTestimonyDoc.asp?id=32215