MyMedicalShopper™

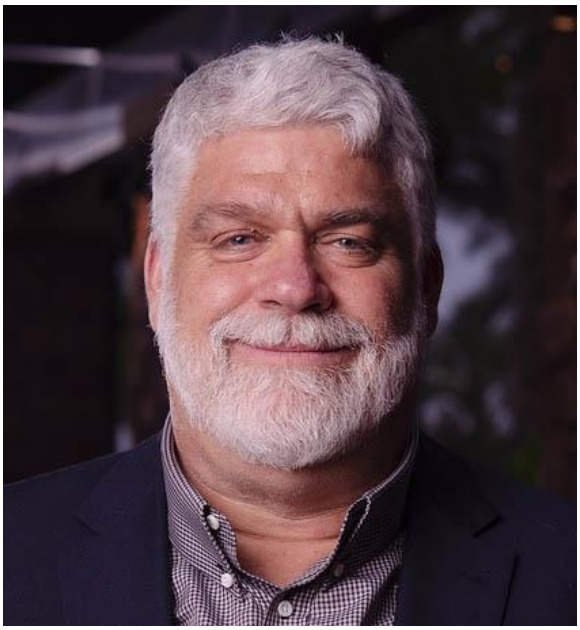
An Analysis of Commercial Carriers' Claims Data Quality and Transparency

To create a stronger, more competitive healthcare system, participants need transparent price and claims information to facilitate fully informed decisions to address their healthcare needs.

MyMedicalShopper aimed to better understand the information commercial health insurance carriers provided on their Explanation of Benefits. Specifically, we analyzed both the quality of information provided, and *what* is being shared with consumers.

-Matthew McCormick and Doug Horner

A Quick Note



I've been an entrepreneur for a long time, and the only constant I've come across in all my business dealings is that there's always something waiting to surprise you.

And the health industry proves it.

MyMedicalShopper was founded to expose the extreme price variation across commercial carriers, leading to millions in medical overspend, both for individuals and their employers.

The backbone of this program is a database of more than 3.6 billion carrier claims.

In addition to offering a consumer-facing shopping tool, our database allows us to provide unprecedented insight to organizations, benefits brokers, and third-party administrators. Using adjudicated medical claims, we're able to identify and eliminate wasteful spending in a benefits program, potentially saving millions in premiums.

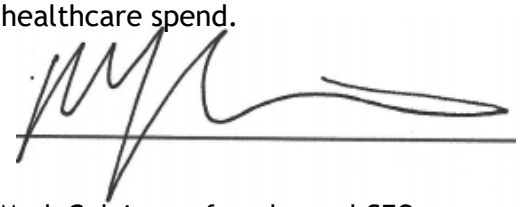
In this instance, our goal here was to leverage our analytics program that powers our consumer-facing platform to better understand the data we're provided by commercial carriers.

The price estimates we provide to consumers are directly impacted by what the carriers are telling them, so we wanted to better understand the relationship between carriers and the quality of their data.

The implications of our analysis suggests that consumers are being forced to make major medical and financial decisions without having all the pertinent information, in large part because it's being withheld from them. This discrepancy in data and data quality is a major factor in the massive price variation in healthcare, more than 1000% difference.

Traditionally, consumers don't see the cost of a medical test or procedure until weeks after receiving treatment, and given the massive price difference between providers (see X-ray in the chart above), the lack of data could mean the difference between $32, $323, or worse.

All of this is to say, the key to any successful partnership is data…accurate, comprehensive, and complete data. We aim to better understand who's helping consumers be successful in controlling their healthcare spend.



Mark Galvin, co-founder and CEO
MyMedicalShopper

Introduction

The data on healthcare prices

Research has uncovered that prices in the commercial sector are the main driver of growing health care costs. Further, the Health Care Cost Institute found that utilization in the commercial insurance sector ***declined by 0.2%*** between 2013 and 2017**,** while prices ***increased 17.1% - or 4% per year***. The study also found substantial price variation within hospitals for undifferentiated procedures where the provision of care should not vary across providers (e.g. lower limb MRIs).

The impact of information

Price and quality transparency serve multiple purposes, such as exposing extreme price variation, shaming grossly overpriced providers, promoting competition, and potentially lowering market prices and generating savings for consumers. Over the last 10 years, there has been a continued and focused effort nationwide to provide upfront, transparent pricing information to employer-sponsored health insurance patients through legislative measures. These efforts include establishing ***All-Payer Claims Database (APCD***) state by state, and more recently, federal rulings instituting requirements that both healthcare providers and plan sponsors disclose plans; negotiated in-network rates on a public web site so participants can access the information free of charge.

Free-market effect

These requirements can help ensure the accurate and timely disclosure of information appropriate to support an efficient and competitive healthcare market. Competition within a market depends on information being readily available to buyers and sellers, and as such, patients must know the price and quality of a procedure or service in advance to make fully informed decisions about their healthcare.

*Medical costs are the **tapeworm** of American **economic competitiveness***
-Warren Buffet

Transparency in Healthcare

Hospital Transparency

Beginning January 1, 2021, hospitals throughout the country must post their standard charges prominently on a publicly available website. These standard charges must be posted two ways:

Machine Readable File

Single machine-readable digital file containing the following standard charges for all items and services provided by the hospital: gross charges, discounted cash prices, payer-specific negotiated charges, and and de-identified minimum and maximum negotiated charges.

Consumer-friendly Display of Shoppable Services

Display of at least 300 "shoppable services" (or as many as the hospital provides if less than 300) that a health care consumer can schedule in advance. Must contain plain language descriptions of the services and group them with ancillary services, and provide the discounted cash prices, payer-specific negotiated charges, and de-identified minimum and maximum negotiated charges.

Hospitals that do not comply with the above could face a civil monetary penalty and publication of the penalty on the CMS website.

Transparency in Coverage

Beginning January 1, 2022, the first phase of the Transparency in Coverage ruling will take effect. This first phase requirement includes disclosure of the plan's negotiated in-network rates and payments to out-of-network providers on a public website is effective as of January 1, 2022. The second and third phase requirements to provide specific cost-sharing information to participants is not effective until 2023 and 2024.

By January 1, 2023, as phase 2, plans must provide cost-sharing liability information on 500 "shoppable" medical items and services. The Department of Treasury,

Transparency in Healthcare

Department of Labor, and Department of Health and Human Services specifically list out the 500 medical items and services that are subject to this requirement. By January 1, 2024, as phase 3, plans must provide cost-sharing liability information on each and every medical item or service that is utilized by a participant.

As stated within the final ruling of the Transparency in Coverage:

"By requiring the dissemination of price and benefit information directly to consumers and to the public, the transparency in coverage requirements will provide the following consumer benefits:

- enables consumers to evaluate health care options and to make cost-conscious decisions;
- strengthens the support consumers receive from stakeholders that help protect and engage consumers;
- reduces potential surprises in relation to individual consumers' out-of-pocket costs for health care services;
- creates a competitive dynamic that may narrow price dispersion for the same items and services in the same health care markets; and
- puts downward pressure on prices which, in turn, potentially lowers overall health care costs.

The goal of the final rules is to deliver these benefits to all consumers and health care stakeholders through greater transparency in coverage."

All Payer Claims Database (APCD)

State by State

The current access to transparent pricing information is therefore limited to the state-by-state APCD mandates. Currently, there are:

- 18 states with existing APCD efforts;
- 10 states with strong interest to establish an APCD
- 11 states with no current APCD activity
- 6 states with APCD efforts in implementation;
- 5 states with existing voluntary efforts

History

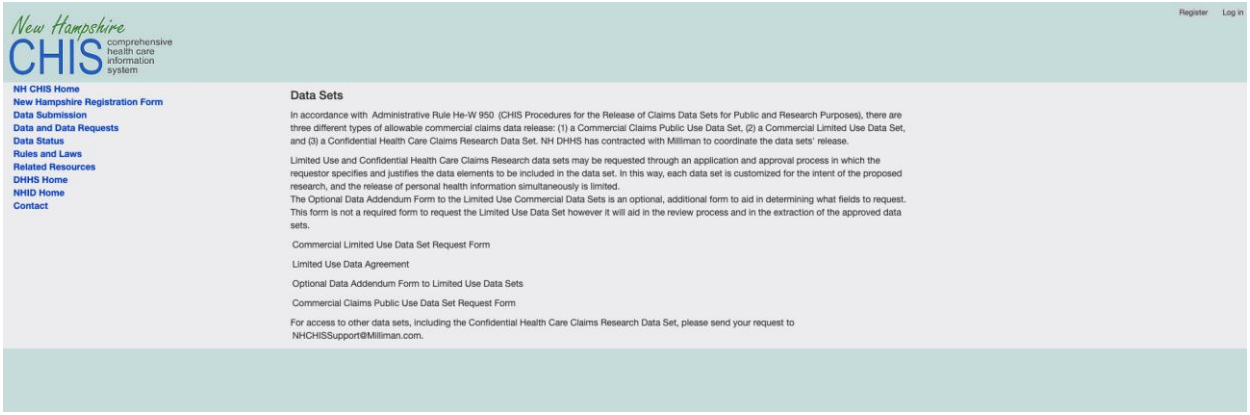
Beginning in 2007 and known as RAPHIC (Regional All-Payer Healthcare Information Council) several Northeast states had begun as a convening organization to develop and support cross-state data harmonization and analytic activities regarding healthcare claims. In 2010, RAPHIC changed its name to the APCD Council, to reflect its national reach. Several themes of focus for the APCD Council were developed, including:

- Harmonizing the data collection and data release rules across the multiple state databases
- Development of a strategy for integrating Medicare data into the all-payer databases
- Sharing of reporting applications being developed by individual states
- Policy analysis
- Providing support to other states developing all-payer claims databases

Data collection

Contingent upon regulations established by each state, APCDs collect health care claims data from a variety of payer sources which include claims from most health care providers in and around the respective state. The claims detail collected, in many states APCDs, includes the allowed amount, or the maximum amount a plan will pay for a covered health care service, as well as the actual paid amounts.

The amounts that payers actually pay providers – paid amounts – are much more meaningful than provider charges. Paid amounts reflect the actual price paid for the service and provide a more accurate basis for the full price or cost sharing the employee and employer will face. Given very few consumers navigate towards tools provided by state's APCDs, the current means of accessing claims information for consumers and by consumers is through their payer web portal.



Overview

What claims and Explanation of Benefits information is readily available to consumers today?

This study is based on all adjudicated claims submitted through our ClaimsFlow™ technology from January 1, 2020 through September 4, 2020. This analysis is based upon Explanation of Benefits (EOBs) that patients have received within their payer portal, six to eight weeks after they have received medical care.

Explanation of Benefits are statements sent by a health insurance company to covered individuals explaining what medical treatments and/or services were paid for on their behalf. Commonly, the EOB is attached to a check or statement of electronic payment.

It is important to note that an EOB is not a bill. It is an overview of what the payer will cover, based upon what the physician has charged and the specific health plan you are enrolled. The EOB should match the amount a patient will receive on their bill.

Comparing an itemized EOB with the associated bill can help consumers identify fraudulent and abusive billing practices, an area of wasteful spending that totals between $58.5 billion to $83.8 billion annually for American healthcare consumers.

Wasted Dollars in Healthcare

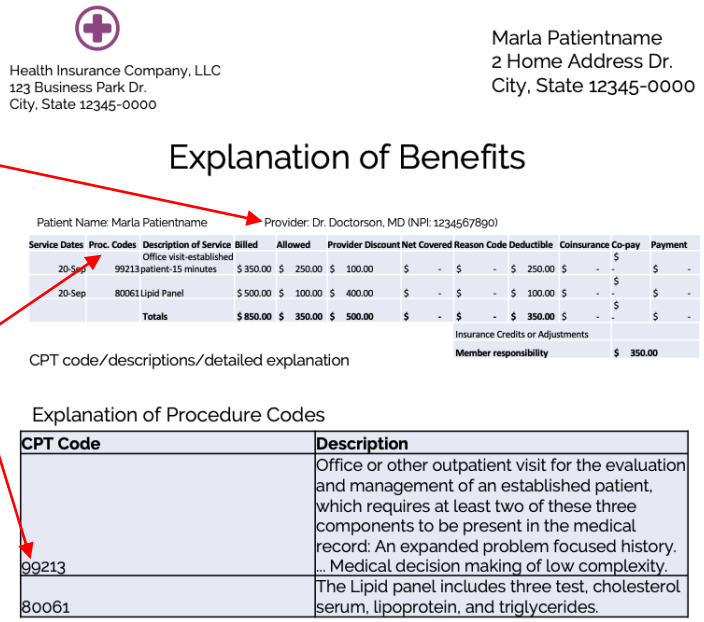
Reason	Total Annual Waste
Failure of Care Delivery	$102.4 billion to $165.7 billion
Failure of Care Coordination	$27.2 billion to $78.2 billion
Overtreatment or Low-Value Care	$75.7 billion to $101.2 billion
Pricing Failure	$230.7 billion to $240.5 billion
Fraud and Abuse	$58.5 billion to $83.9 billion
Administrative Complexity	$265.6 billion

Source: Journal of the American Medical Association

Analysis

We established a seven-tier rating, specifically targeting the quality and amount of data provided upon a patient's EOB regarding:

- ***National Provider Identifier (NPI)***
  - 10-digit unique ID for healthcare providers; carriers are required by law to use them
- ***Current Procedural Terminology (CPT)***
  - 5-digit code for all medical test and procedure



Health Insurance Company, LLC
123 Business Park Dr.
City, State 12345-0000

Marla Patientname
2 Home Address Dr.
City, State 12345-0000

Explanation of Benefits

Patient Name: Marla Patientname — Provider: Dr. Doctorson, MD (NPI: 1234567890)

Service Dates	Proc. Codes	Description of Service	Billed	Allowed	Provider Discount	Net Covered	Reason Code	Deductible	Coinsurance	Co-pay	Payment
20-Sep	99213	Office visit-established patient-15 minutes	$ 350.00	$ 250.00	$ 100.00	$ -	$ -	$ 250.00	$ -	$ -	$ -
20-Sep	80061	Lipid Panel	$ 500.00	$ 100.00	$ 400.00	$ -	$ -	$ 100.00	$ -	$ -	$ -
		Totals	**$ 850.00**	**$ 350.00**	**$ 500.00**	**$ -**	**$ -**	**$ 350.00**	$ -	$ -	$ -
								Insurance Credits or Adjustments			
								Member responsibility		**$ 350.00**	

CPT code/descriptions/detailed explanation

Explanation of Procedure Codes

CPT Code	Description
99213	Office or other outpatient visit for the evaluation and management of an established patient, which requires at least two of these three components to be present in the medical record: An expanded problem focused history. ... Medical decision making of low complexity.
80061	The Lipid panel includes three test, cholesterol serum, lipoprotein, and triglycerides.

Tiers

1. NPI and CPT code
2. Usable provider description and CPT codes
3. NPI and usable CPT descriptions
4. Usable provider and CPT descriptions
5. No/unusable provider descriptions and usable CPT descriptions
6. NPI/usable provider descriptions and unusable CPT descriptions
7. Unusable provider and CPT descriptions

Tier 1: NPI/CPT Code Included

Health Insurance Company, LLC
123 Business Park Dr.
City, State 12345-0000

Marla Patientname
2 Home Address Dr.
City, State 12345-0000

Explanation of Benefits

Provider name & NPI

Patient Name: Marla Patientname

Provider: Dr. Doctorson, MD (NPI: 1234567890)

Service Dates	Proc. Codes	Description of Service	Billed	Allowed	Provider Discount	Net Covered	Reason Code	Deductible	Coinsurance	Co-pay	Payment
20-Sep	99213	Office visit-established patient-15 minutes	$ 350.00	$ 250.00	$ 100.00	$ -	$ -	$ 250.00	$ -	$ -	$ -
20-Sep	80061	Lipid Panel	$ 500.00	$ 100.00	$ 400.00	$ -	$ -	$ 100.00	$ -	$ -	$ -
		Totals	**$ 850.00**	**$ 350.00**	**$ 500.00**	**$ -**	**$ -**	**$ 350.00**	$ -	$ -	$ -

Insurance Credits or Adjustments	
Member responsibility	**$ 350.00**

CPT code/descriptions/detailed explanation

Explanation of Procedure Codes

CPT Code	Description
99213	Office or other outpatient visit for the evaluation and management of an established patient, which requires at least two of these three components to be present in the medical record: An expanded problem focused history. ... Medical decision making of low complexity.
80061	The Lipid panel includes three test, cholesterol serum, lipoprotein, and triglycerides.

To qualify as a Tier 1 payer, within their EOBs, patients have access to the CPT Code, a text description of the CPT code, the provider name as well as the associated NPI. This is the highest tier of transparency, allowing patients to fully comprehend the breadth of their care.

Tier 2: Usable provider description and CPT codes

Health Insurance Company, LLC
123 Business Park Dr.
City, State 12345-0000

Marla Patientname
2 Home Address Dr.
City, State 12345-0000

Explanation of Benefits

Provider name, No NPI

Patient Name: Marla Patientname

Provider: Dr. Doctorson, MD

Service Dates	Proc. Codes	Description of Service	Billed	Allowed	Provider Discount	Net Covered	Reason Code	Deductible	Coinsurance	Co-pay	Payment
20-Sep	99213	Office visit-established patient-15 minutes	$ 350.00	$ 250.00	$ 100.00	$ -	$ -	$ 250.00	$ -	$ -	$ -
20-Sep	80061	Lipid Panel	$ 500.00	$ 100.00	$ 400.00	$ -	$ -	$ 100.00	$ -	$ -	$ -
		Totals	**$ 850.00**	**$ 350.00**	**$ 500.00**	**$ -**	**$ -**	**$ 350.00**	$ -	$ -	$ -
									Insurance Credits or Adjustments		
									Member responsibility	**$ 350.00**	

CPT code/descriptions/detailed explanation

Explanation of Procedure Codes

CPT Code	Description
99213	Office or other outpatient visit for the evaluation and management of an established patient, which requires at least two of these three components to be present in the medical record: An expanded problem focused history. ... Medical decision making of low complexity.
80061	The Lipid panel includes three test, cholesterol serum, lipoprotein, and triglycerides.

To qualify as a Tier 2 payer, within their EOBs, patients have access to the CPT Code, a text description of the CPT code, and a usable provider description.

Tier 3: NPI and usable CPT descriptions

Health Insurance Company, LLC
123 Business Park Dr.
City, State 12345-0000

Marla Patientname
2 Home Address Dr.
City, State 12345-0000

Explanation of Benefits

Provider name & NPI

Patient Name: Marla Patientname

Provider: Dr. Doctorson, MD (NPI: 1234567890)

Service Dates	Procedure Name	Billed	Allowed	Provider Discount	Net Covered	Reason Code	Deductible	Coinsurance	Co-pay	Payment
20-Sep	Office visit-established patient-15 minutes	$ 350.00	$ 250.00	$ 100.00	$ -	$ -	$ 250.00	$ -	$ -	$ -
20-Sep	Lipid Panel	$ 500.00	$ 100.00	$ 400.00	$ -	$ -	$ 100.00	$ -	$ -	$ -
	Totals	**$ 850.00**	**$ 350.00**	**$ 500.00**	**$ -**	**$ -**	**$ 350.00**	$ -	$ -	$ -
						Insurance Credits or Adjustments				
						Member responsibility			**$ 350.00**	

No **Procedure Codes** column/description

To qualify as a Tier 3 payer, within their EOBs, patients have access to a text description of the procedure, the provider name as well as the associated NPI.

Tier 4: Usable provider and CPT descriptions

Health Insurance Company, LLC
123 Business Park Dr.
City, State 12345-0000

Marla Patientname
2 Home Address Dr.
City, State 12345-0000

Explanation of Benefits

Provider name, no NPI

Patient Name: Marla Patientname

Provider: Dr. Doctorson, MD

Service Dates	Procedure Name	Billed	Allowed	Provider Discount	Net Covered	Reason Code	Deductible	Coinsurance	Co-pay	Payment
20-Sep	Office visit-established patient-15 minutes	$ 350.00	$ 250.00	$ 100.00	$ -	$ -	$ 250.00	$ -	$ -	$ -
20-Sep	Lipid Panel	$ 500.00	$ 100.00	$ 400.00	$ -	$ -	$ 100.00	$ -	$ -	$ -
	Totals	**$ 850.00**	**$ 350.00**	**$ 500.00**	**$ -**	**$ -**	**$ 350.00**	$ -	$ -	$ -

Insurance Credits or Adjustments	
Member responsibility	**$ 350.00**

No **Procedure Codes** column/description

To qualify as a Tier 4 payer, within their EOBs, patients have access to a text description of the procedure, as well as a usable provider description.

Tier 5: No/unusable provider descriptions and usable CPT descriptions

Health Insurance Company, LLC
123 Business Park Dr.
City, State 12345-0000

Marla Patientname
2 Home Address Dr.
City, State 12345-0000

Explanation of Benefits

No provider name, no NPI

Patient Name: Marla Patientname

Service Dates	Procedure Name	Billed	Allowed	Provider Discount	Net Covered	Reason Code	Deductible	Coinsurance	Co-pay	Payment
20-Sep	Office visit-established patient-15 minutes	$ 350.00	$ 250.00	$ 100.00	$ -	$ -	$ 250.00	$ -	$ -	$ -
20-Sep	Lipid Panel	$ 500.00	$ 100.00	$ 400.00	$ -	$ -	$ 100.00	$ -	$ -	$ -
	Totals	**$ 850.00**	**$ 350.00**	**$ 500.00**	**$ -**	**$ -**	**$ 350.00**	$ -	$ -	$ -
						Insurance Credits or Adjustments				
						Member responsibility			**$ 350.00**	

No **Procedure Codes** column/description

To qualify as a Tier 5 payer, within their EOBs, patients have access to a text description of the procedure and unusable provider description, lacking NPI.

Tier 6: NPI/usable provider descriptions and unusable CPT descriptions

Health Insurance Company, LLC
123 Business Park Dr.
City, State 12345-0000

Marla Patientname
2 Home Address Dr.
City, State 12345-0000

Explanation of Benefits

Provider name, no NPI

Patient Name: Marla Patientname

Provider: Dr. Doctorson, MD

Service Dates	Billed	Allowed	Provider Discount	Net Covered	Reason Code	Deductible	Coinsurance	Co-pay	Payment
20-Sep	$ 350.00	$ 250.00	$ 100.00	$ -	$ -	$ 250.00	$ -	$ -	$ -
20-Sep	$ 500.00	$ 100.00	$ 400.00	$ -	$ -	$ 100.00	$ -	$ -	$ -
	$ 850.00	**$ 350.00**	**$ 500.00**	**$ -**	**$ -**	**$ 350.00**	$ -	$ -	$ -

Insurance Credits or Adjustments	
Member responsibility	**$ 350.00**

No **Procedure Codes** column/procedure name/description

To qualify as a Tier 6 payer, within their EOBs, patients have unusable CPT descriptions and the provider name.

Tier 7: Unusable provider and CPT descriptions

Health Insurance Company, LLC
123 Business Park Dr.
City, State 12345-0000

Marla Patientname
2 Home Address Dr.
City, State 12345-0000

Explanation of Benefits

No provider name, no NPI

Patient Name: Marla Patientname

Service Dates	Billed	Allowed	Provider Discount	Net Covered	Reason Code	Deductible	Coinsurance	Co-pay	Payment
20-Sep	$ 350.00	$ 250.00	$ 100.00	$ -	$ -	$ 250.00	$ -	$ -	$ -
20-Sep	$ 500.00	$ 100.00	$ 400.00	$ -	$ -	$ 100.00	$ -	$ -	$ -
	$ 850.00	**$ 350.00**	**$ 500.00**	**$ -**	**$ -**	**$ 350.00**	$ -	$ -	$ -

Insurance Credits or Adjustments	
Member responsibility	**$ 350.00**

No **Procedure Codes** column/procedure name/description

To qualify as a Tier 7 payer, within their EOBs, patients have unusable provider description as well as unusable CPT/procedure descriptions. This is the lowest tier of transparency, with abundant opacity.

Process

Identify carriers from which MyMedicalShopper had parsed a significant number of claims

→

Programmatically count the number of claims that had
- *Valid NPI*
- *Valid CPT/HCPCS code*
- *Textual description of the provider*
- *Textual description of the procedure*

→

Manually screen the usefulness of carrier descriptions when they were not passed through with valid NPIs or CPT/HCPC codes

Tiers were determined based on the following criteria:

- Having the actual NPI or CPTs
- Mixes of NPI or CPT with a textual description of one or the other
- Textual descriptions of both
- Usable textual descriptions for just one with the other being unusable,
- Both descriptions of provider and procedure being unusable

"Usability" was based on if the provider/procedure names were descriptive enough that they could be cross-referenced with the official sources* to find the identifier that relates to the description.

**Centers for Medicare and Medicaid NPPES NPI table for providers; American Medical Association CPT/HCPCS for procedures*

Conclusion

Without transparency in pricing, a market cannot function competitively. This lack of competition in the United States healthcare market is demonstrated by radical, unexplained variations in prices for procedures, within and across regions. As evidenced by the aforementioned rulings, the Department of Health and Human Services and Department of Labor believe that consumers will take full advantage of increased transparency to navigate towards cost-effective providers.

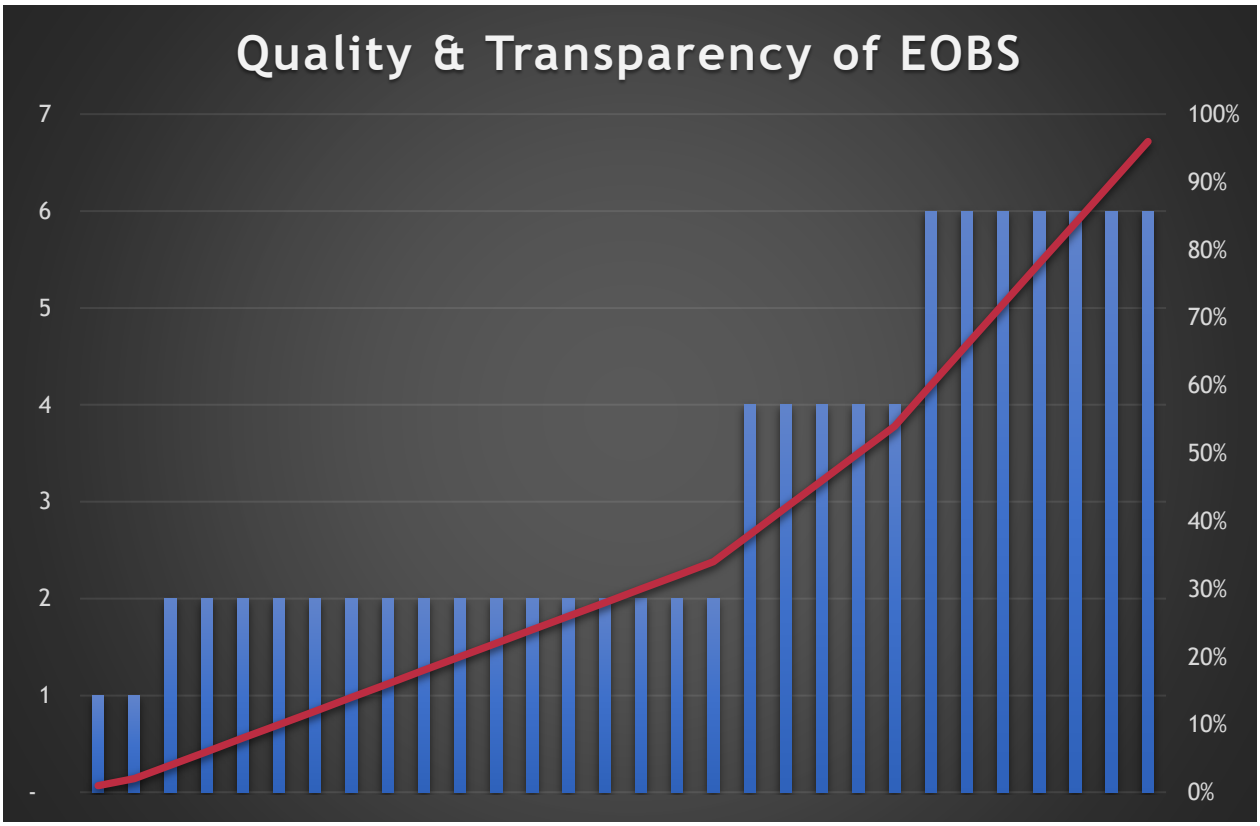
Given the current state of transparency across the country, in most cases, it is only possible after care has been received for a patient to view and understand the costs and quantity of healthcare provided. Patients should proceed to verify the procedure codes, the procedure code descriptions, as well as the provider information, ensuring accurate information relating to their episode of care. Any error related to medical care coding and billing could significantly inflate bills per service and devastate consumers financially. Given that it is estimated close to 80% of medical bills contain errors, it is compulsory that patients demand detailed, itemized, explanation of benefits.

According to 45 CFR § 164.524: "Access of individuals to protected health information, The covered entity must permit an individual to request access to inspect or to obtain a copy of the protected health information about the individual that is maintained in a designated record set. The covered entity may require individuals to make requests for access in writing, provided that it informs individuals of such a requirement." In so many words, a patient could request that a Tier 7 payer provide Tier 1 transparency, in order to more fully understand the scope of medical care and billing records pertinent to their specific medical care received.

The potential for fraud, waste, and abusive billing practices rise as the quality and transparency of explanation of benefits decrease. It is dysfunctional and unacceptable to expect consumers to pay for services when they receive an explanation of benefits that is not itemized. An itemized explanation of benefits allows consumers to comprehend the scope and associated costs of their medical care. It is entirely within consumer's rights to request an itemized explanation of benefits and bill from both healthcare providers and health insurance carriers. By requesting itemized explanation of benefits, and addressing possible fraudulent and abusive billing practices, it is conceivable to remove $58.5 billion to $83.9 billion from the United States' total health care spending.

Conclusion

*Nearly **all** carriers analyzed failed to provide **complete** data on providers, procedures, and tests.*



1. 2 rated 1
2. 15 rated 2*
3. 0 rated 3
4. 5 rated 4
5. 0 rated 5
6. 8 rated 6
7. 0 rated 7

**9 of 15 providers had limited CPT descriptions or Rx descriptions only*

Potential for Fraud, Waste, and Abuse

Carrier Tier Code

References

APCD Council. (n.d.). Retrieved November 12, 2020, from https://www.apcdcouncil.org/

Austin, D., & Gravelle, J. G. (2008). *Does Price Transparency Improve Market Efficiency? Implications of Empirical Evidence in Other Markets for the Health Sector* (pp. 1-41, Rep. No. RL34101). Washington D.C.: Congressional Research Service.

Azar, A. M., Mnuchin, S.T., and Acosta, A. "Reforming America's Healthcare System Through Choice and Competition." United States, Department of Health and Human Services. December 3, 2018. Available at: https://www.hhs.gov/sites/default/files/Reforming-Americas-Healthcare-System-Through-Choice-andCompetition.pdf.

Boynton, A., & Robinson, J. C. (2015, July 7). Appropriate Use Of Reference Pricing Can Increase Value [Web log post]. Retrieved November 12, 2020, from https://www.healthaffairs.org/do/10.1377/hblog20150707.049155/full/

Cooper, Z., Craig, S. V., Gaynor, M., & Reenen, J. V. (2018). The Price Ain't Right? Hospital Prices and Health Spending on the Privately Insured*. *The Quarterly Journal of Economics, 134*(1), 51-107. doi:10.1093/qje/qjy020

Dieleman, J. L., Squires, E., Bui, A. L., Campbell, M., Chapin, A., Hamavid, H., . . . Murray, C. J. (2017). Factors Associated With Increases in US Health Care Spending, 1996-2013. *Jama, 318*(17), 1668. doi:10.1001/jama.2017.15927

Frakt, A., & Mehrotra, A. (2019). What Type of Price Transparency Do We Need in Health Care? *Annals of Internal Medicine, 170*(8), 561. doi:10.7326/m19-0534

Gooch, K. (2016, April 12). Medical billing errors growing, says Medical Billing Advocates of America: Many medical bills contain errors or overcharges. In fact, billing advocates and other health professionals estimate up to 80 percent of medical bills contain errors. Retrieved November 12, 2020, from https://www.beckershospitalreview.com/finance/medical-billing-errors-growing-says-medical-billing-advocates-of-america.html

Jha, A. K., Papanicolas, I., & Woskie, L. K. (2018, May 1). Health Care Spending in the United States and Other High-Income Countries. Retrieved November 12, 2020, from https://pubmed.ncbi.nlm.nih.gov/29536101/

References

Kurani, N., & Cox, C. (2020, September 28). What drives health spending in the U.S. compared to other countries. Retrieved November 12, 2020, from https://www.healthsystemtracker.org/brief/what-drives-health-spending-in-the-u-s-compared-to-other-countries/

Lieber, E. M. (2017). Does It Pay to Know Prices in Health Care? *American Economic Journal: Economic Policy, 9*(1), 154-179. doi:10.1257/pol.20150124

Medicare and Medicaid Programs: CY 2020 Hospital Outpatient PPS Policy Changes and Payment Rates and Ambulatory Surgical Center Payment System Policy Changes and Payment Rates. Price Transparency Requirements for Hospitals To Make Standard Charges Public, Https://www.federalregister.gov/documents/2019/11/27/2019-24931/medicare-and-medicaid-programs-cy-2020-hospital-outpatient-pps-policy-changes-and-payment-rates-and (2019)

Murray, R., MPP, Tessitore, L., MBA, MSB, Caballero, A., MPA, Delbanco, S., PhD, Gu, A., JD, & King, J., JD, PhD. (2020). *Report Card on State Price Transparency Laws* (pp. 1-19, Rep.). Berkeley, CA: Catalyst for Payment Reform.

Porter, M. and Teisberg, E. Redefining Health Care. Harvard Business School Press. Boston, MA. 2006, pg. 54.

Shrank, W. H., MD, MSHS, Rogstad, T. L., MPH, & Parekh, N., MD, MS. (2019). Waste in the US Health Care System: Estimated Costs and Potential for Savings. *JAMA, 322*(15), 1501-1509. doi:10.1001/jama.2019.13978

Sinaiko, A. D., & Rosenthal, M. B. (2016). Examining A Health Care Price Transparency Tool: Who Uses It, And How They Shop For Care. *Health Affairs, 35*(4), 662-670. doi:10.1377/hlthaff.2015.0746

Transparency in Coverage, CMS-9915-F Https://www.cms.gov/CCIIO/Resources/Regulations-and-Guidance/Downloads/CMS-Transparency-in-Coverage-9915F.pdf (2020).

Wu, S., Sylwestrzak, G., Shah, C., & Devries, A. (2014). Price Transparency For MRIs Increased Use Of Less Costly Providers And Triggered Provider Competition. *Health Affairs, 33*(8), 1391-1398. doi:10.1377/hlthaff.2014.0168