MILLIMAN BRIEF

Hospital price transparency: Data or information?

Challenges with the posted data present a barrier to developing meaningful information

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Milliman has been actively tracking the hospital price transparency data that hospitals and health systems started to publish on January 1, 2021. We have identified files from nearly 2,400 hospitals across the United States and we are continually evaluating the posted data and newly published data sets.

Milliman has published two briefs that provide an overview of the new regulations and how the industry is responding to these requirements. The most recent brief, published on June 22, 2021, estimated that, at that time, approximately 60% of health systems had publicly provided the required data elements.[1] Although there is a wealth of new hospital price data available, it is difficult to translate the raw data into meaningful analyses without (1) access to robust utilization data, and (2) a deep understanding of healthcare data sets and hospital payment practices. This brief provides an overview of the key challenges we have identified with interpreting the data and the limitations of available information.

Introduction

On November 27, 2019, the Centers for Medicare and Medicaid Services (CMS) published a Final Rule[2] detailing requirements for hospitals to publish, by January 1, 2021, machine-readable files of their payment rates and consumer-friendly websites for 300 “shoppable” services.

The shoppable services are typically provided on hospital-specific websites intended primarily for patient-level access and browsing. The machine-readable files provide a more comprehensive view of reimbursement rates for the hospital and are the focus of this brief.

The data elements required on the machine-readable file include those shown in Figure 1.

FIGURE 1: REQUIRED DATA ELEMENTS

- Gross charges
- Discounted cash prices
- Payer-specific negotiated charges
- De-identified minimum negotiated charges
- De-identified maximum negotiated charges

This information is required for all items and services (both individual and packaged) provided by the hospital to a patient in connection with an inpatient admission or an outpatient department visit.

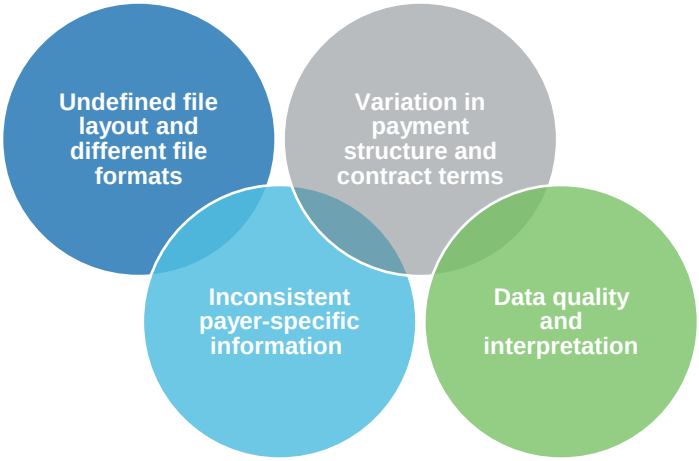
A robust data set including all elements presents an opportunity to compare payment rates among different stakeholders, including:

- Payment rates for different payers within a single health system or facility
- Payment rates for different facilities within a single health system
- Payment rates across different health systems and facilities

The magnitude of data available has the potential to be extremely valuable for stakeholders including researchers, economists, consumers, health policy experts, payers, and providers. However, after reviewing files published throughout the United States, we have found it is challenging to use the posted data to perform meaningful analyses without significant data manipulation, interpretation, and access to utilization information.

In this brief, we provide our observations and considerations regarding the obstacles we have identified, including those shown in Figure 2.

FIGURE 2: CHALLENGES WITH DATA



Findings

Throughout our ongoing review of the published machine-readable files, we have encountered challenges that may limit the ability of stakeholders to easily utilize the hospital price transparency data. This includes but is not limited to the following items.

UNDEFINED FILE LAYOUT AND DIFFERENT FILE FORMATS

File layout. The final rule did not provide or require a standard file layout or a detailed data specification document for providers. As a result, the structure and orientation of the data varies significantly.

For example, some providers may list the payer-specific payment rates in separate columns for each payer while some may list them in different rows. While this may be a minor inconvenience for some users, it hinders the ability for the average user to perform data comparisons quickly and effectively in order to inform care decisions.

The final rule also did not give requirements for the specific code sets to use for the different levels of services in the files, so there can be a mix of procedure codes, charge-master codes, and episode groupings, to name a few.

File format. The regulations require hospitals to publish the data in a file format that can be imported or read into a computer system for further processing. Examples of machine-readable formats include Extensible Markup Language (XML), JavaScript Object Notation (JSON), and comma-separated values (CSV) formats. Hospitals have used all these formats and more in the data posted to date. Users need to be familiar with the different file formats to extract and convert the data to facilitate comparisons across health systems or hospitals.

While the lack of well-defined and standardized file layouts and formats presents an inconvenience to collecting and storing the data, there are even more substantial challenges associated with developing information that is comparable and actionable, as noted below.

DATA QUALITY AND INTERPRETATION

Data consistency. The quality and consistency of the data provided by each health system or hospital varies significantly. The lack of a detailed data specifications document requires users of the posted data to interpret the payment rates, codes, and other information provided in the files. This presents a risk for data to be misinterpreted or misused. For example:

- Some health systems or hospitals did not clearly distinguish between inpatient and outpatient payment rates, while most others did.
- As shown in the table in Figure 3, some files contain what appear to be duplicate records with differing negotiated rates, which could be due to missing attributes (such as procedure code modifiers) not published by the hospital.

FIGURE 3: DATA INCONSISTENCIES

Description	Revenue Code	CPT Code	Payer 1	Payer 2
OP SERV MOD ACUITY- NEW PT	510	99203	$104.52	$280.50
OP SERV MOD ACUITY-NEW PT	510	99203	$224.16	$471.75
BURN LOCAL TRT/ FIRST DEGREE	516	16000	$104.82	$157.25
BURN LOCAL TRT/ FIRST DEGREE	516	16000	$171.82	$335.75

Service codes. The regulations require that each item or service must be accompanied by a description and common billing or accounting code. Examples of common billing or account codes include diagnosis-related group (DRG), Healthcare Common Procedure Coding System (HCPCS), Current Procedural Terminology (CPT), Ambulatory Payment Classification (APC), or revenue codes. Less common coding systems, such as Enhanced Ambulatory Patient Grouping (EAPG), are also used by some health systems. Some entities publish one set of codes per service category (i.e., inpatient, outpatient, and pharmacy), while others include multiple code sets in their transparency data.

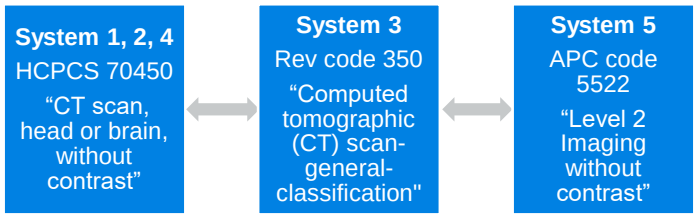
The variation in use of code sets presents significant challenges for individuals wishing to compare payment rates across different entities. Users may need to apply mappings of different code sets and a standard methodology to convert payment rates to a "like" basis for accurate interpretations. For example, Milliman has collected a comparison of code sets from five different health systems with the characteristics shown in Figure 4.

FIGURE 4: CODE SET COMPARISONS

	System 1	System 2	System 3	System 4	System 5
CPT/ HCPCS	✔	✔	X	✔	X
DRG	✔	✔	X	✔	✔
NDC	X	X	X	✔	X
Revenue Code	X	✔	✔	✔	X
APC Code	X	X	X	X	✔
Episode Grouping	X	X	✔	X	X

Identifying services for comparison across files requires in-depth knowledge of the various code sets and service categories. Using the example above, comparing rates for a single procedure, such as a head or brain CT scan, would require identifying the correct procedure codes in each code set and attempting to translate the varying code sets to a single, comparable basis, as shown in Figure 5.

FIGURE 5: RATE COMPARISONS



Additionally, important details such as DRG type (MS-DRG, AP-DRG, APR DRG) and version number are often excluded from the files, adding further complexity to comparisons of different files as these variations can have material impacts on how a procedure may be coded.

Utilization. The files do not contain any volume or utilization information by code, which prevents users from determining the services most commonly performed at each hospital or developing aggregate analyses of payment rates based on a hospital's reported service mix.

Not every hospital performs the same services, so developing comparisons across different health systems and hospitals requires additional scrutiny, especially when applying utilization assumptions or comparing claims data across files. If attempting to compare health systems and hospitals across an entire market, it may be difficult to find a significant number of procedures or services that overlap as the number of hospitals increases.

The lack of utilization data can also introduce additional challenges around services where the utilization reporting basis may differ (e.g., units versus procedures versus visits). The dollars reported will reflect each service's utilization basis, so identifying potential differences in the bases between files is critical.

For example, comparing payment rates for pharmacy J codes (a subset of HCPCS codes) may be a challenge. The most accurate way to categorize drug claims is using the more detailed National Drug Codes (NDC), which are not commonly found in the hospital pricing data. Comparing J code payment rates at a HCPCS level may result in inaccurate conclusions due to differences in units or composition across the same J code. See Figure 6.

FIGURE 6: J CODE COMPARISONS

Description	Revenue Code	HCPCS Code	Payer 1	Payer 2
AMIODARONE 150 MG/100 ML DEXTROSE BOLUS (PREMIX)	636	J0282	$29.02	$136.03
AMIODARONE HCL 150 MG/3ML IV SOLN	636	J0282	$9.74	$45.66
AMIODARONE HCL 450 MG/9ML IV SOLN	636	J0282	$9.64	$45.17
AMIODARONE HCL IN DEXTROSE 360-4.14 MG/200ML-% IV SOLN	636	J0282	$33.56	$157.28

Payer-specific rates. In many files, required fields such as payer-specific payment rates appear to be missing or incomplete, but adherence with the regulations appears to be rising.

Effective date. The final rule requires hospitals and health systems to report the publication date of the files. However, hospitals were not required to specify an effective date or date range for the reported payment rates, so it is not always clear whether hospitals are reporting current or historical payment rates.

VARIATION IN PAYMENT STRUCTURE AND CONTRACT TERMS

The final rule did not require hospitals to share how the negotiated charges are imposed for each payer (e.g., case rate, per diem, discount off of billed charges, etc.). As a result, many health systems and hospitals do not consistently distinguish between contracted rates per service, case rates, or average per diem rates. Some providers attempted to identify the payment rate type in the files but there is no standardized methodology.

For example, some providers added comments identifying case rates or per diem rates in a separate column of data while others included the payment rate type along with the billing or accounting code. Some hospitals may have omitted this information entirely.

The final rule did not define a standard methodology or provide detailed guidance for reporting payment methodologies that may not have specific contracted dollar rates per service. This adds complexity, such as distinguishing whether a value is from the hospital's experience data or sourced directly from a contract.

Examples include:

- A value-based payment program may make quality-based payments, causing differences between the historical experience and the contractual rates for the same service. This may lead to inaccurate comparisons of payment rates across different entities.
- For services that may include more than one service in a single payment (e.g., outlier claim clauses, case rates, bundled services, APC payment logic), it is often not clear which other services may be included. For example, a case rate for a major joint replacement may include all preoperative and postoperative care. The corresponding billing codes and services included in the case rate are not typically clear in the files.

INCONSISTENT PAYER-SPECIFIC INFORMATION

Original Medicare and Medicaid fee-for-service (FFS) may not be included in the files as payers even though they may be a significant source of revenue for most facilities.

Payer contracts may be specific to lines of business (e.g., commercial, managed Medicaid, and Medicare Advantage) or product (e.g., broad network, narrow network, direct-to-employer arrangements), which may not be clear in the machine-readable files.

Users cannot accurately compare the payer-specific negotiated charges or de-identified minimum and maximum negotiated charges without understanding the different payers and products listed in each file. This may require knowledge of the local healthcare market in a hospital's particular geographic location because the payer and product names are often unclear.

The payer names in the files reflect each hospital's naming convention, which makes it very difficult to identify payers and products across different hospitals.

For example, using a sample of hospitals in a single geographic region, we compared network names for two payers (Aetna and Anthem) and two lines of business (Medicare Advantage and commercial). It is difficult to ascertain how many different products exist and how to match them up for analysis of similar products based on just the payer names, as shown in Figure 7.

FIGURE 7: COMPARISON CHALLENGES

Aetna – Medicare Advantage	Anthem - Commercial
Aetna Medicare HMO-PPO	Anthem_Blue_Priority
Aetna Medicare Advantra	Anthem_Blue_Preferred
i_AETNA_MEDICARE_376_MEDAETNA	Anthem_PPO
Medicare Managed Care Aetna	Anthem Commercial (HMO Product)
AETNA_MEDICARE	Anthem Commercial (PPO Product)
Aetna Medicare	i_ANTHEM_BLUE_CROSS_379_ANTHEMBC1
AETNA MEDICARE ADVANTAGE	i_ANTHEM_BLUE_CROSS_379_ANTHEMBC
Aetna_Medicare_Advantage	ANTHEM BLUE PRIORITY

Some hospitals combined all products within a given line of business or for a single payer and reported some type of blended charge information. Similar to the concerns with contract pricing methodology, it may be difficult to distinguish whether a value is derived from the hospital's blended experience data or has been sourced directly from a contract or is from multiple, blended contracts.

Conclusion

The new transparency requirements present a great opportunity for consumers and other stakeholders to better understand healthcare costs. However, while this *data* may be accessible for stakeholders, users face significant roadblocks interpreting the data and creating meaningful *information*.

As stand-alone data sets, the posted price data provide very little value for a user who does not have a deep understanding of healthcare payment data. Comparing these files across multiple health systems and hospitals requires detailed data manipulation, translation of payment rates under different coding systems and payment methodologies, and an understanding of the payers and products in the market. Access to robust utilization and claims data is necessary to determine an appropriate service mix to develop meaningful comparisons of payment rates across data sets and to other standard benchmarks such as Medicare payment rates.

Stakeholders who have interest in understanding what the data mean need to ensure they have taken all of the appropriate steps to translate and synthesize the data, and not simply relied on the raw posted data to create basic comparisons. Despite the challenges presented within this brief, Milliman is using its expertise, knowledge, research, and access to robust utilization information to turn this data into actionable information.

Limitations and caveats

The observations and ideas presented in this paper reflect a point-in-time conclusion based on the current information collected and reviewed. Files and file content may have been updated since retrieval.

Reviewed elements include hospital reported standard charges, payer-specific negotiated charges, and de-identified minimum and maximum negotiated charges by item or service.

No audit of the values in the files was performed.

There are over 6,000 total hospitals[3] in the United States and results are subject to change as more data is collected and analyzed. We are analyzing files for short-term, critical access, and children's hospitals.

ENDNOTES

[1] Barrington, A, Boschert, J, Gaal, M, Lewis, D (June 2021). Hospital Price Transparency: June 2021 Update. Milliman Brief. Retrieved September 10, 2021, from https://www.milliman.com/en/insight/hospital-price-transparency-june-2021-update-early-implementation-trends-for-new-regulations.

[2] Federal Register, Vol. 84, No. 229 (November 27, 2019). 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. Final Rule. Retrieved September 10, 2021, from https://www.govinfo.gov/content/pkg/FR-2019-11-27/pdf/2019-24931.pdf.

[3] Pickering, J, Lewis, D, Hamacheck M, Barrington, A (December 2020). Hospital Price Transparency – Now What? Milliiman Insight. Retrieved September 10, 2021, from https://us.milliman.com/en/insight/hospital-price-transparency-now-what.

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