# Maximizing the Value of Price Transparency Data with **Better MRFs**

In 2020, the US Federal Government implemented the **"Transparency in Coverage"** Rule, which mandated health insurers, group health plans, and self-funded clients to provide consumers with cost-sharing data through machine-readable files (MRF). These MRFs have supplied pricing data for covered items and services from July 1, 2022. They provide pricing data based on in-network negotiated payment rates as well as historical out-of-network allowed amounts.

Initially, a national payer on the East Coast had MRFs as large as 650 GB (compressed), expanding to over 1 TB of data when downloaded and uncompressed. However, the situation has improved as payers have identified appropriate solutions, such as provider references, to resolve issues for generating MRFs.

More than 85% of health plans have completely adopted and become compliant within a few months of the mandate's launch. These positive developments indicate that CMS' mandate is progressing towards achieving full transparency in healthcare services.

Research organizations have initiated engagement with MRF data. They endeavor to enrich and utilize it for innovative use cases and business objectives.
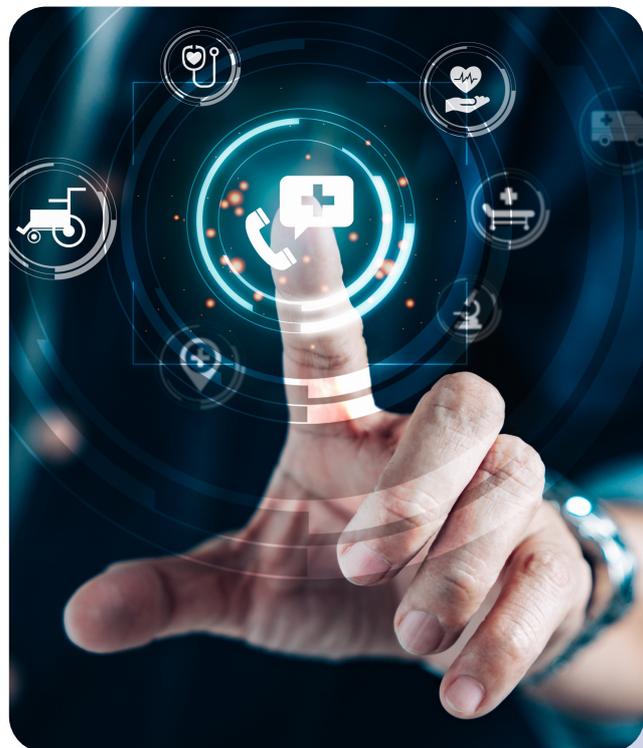
Findings, Observations, and Recommendations from MRF Data

Working with MRFs and developing MRF solutions has provided valuable insights into the true worth of the data. Here are a few observations and lessons we have learned

MRFs unveil significant price variations

Figure 1 illustrates the extreme differences in negotiated prices for a single service in a specific region of Pennsylvania. We can identify the underlying reasons for these variances through benchmarks and detailed market analysis. However, it is a substantial undertaking to sift through publicly available MRF data and extract strategic insights from it.
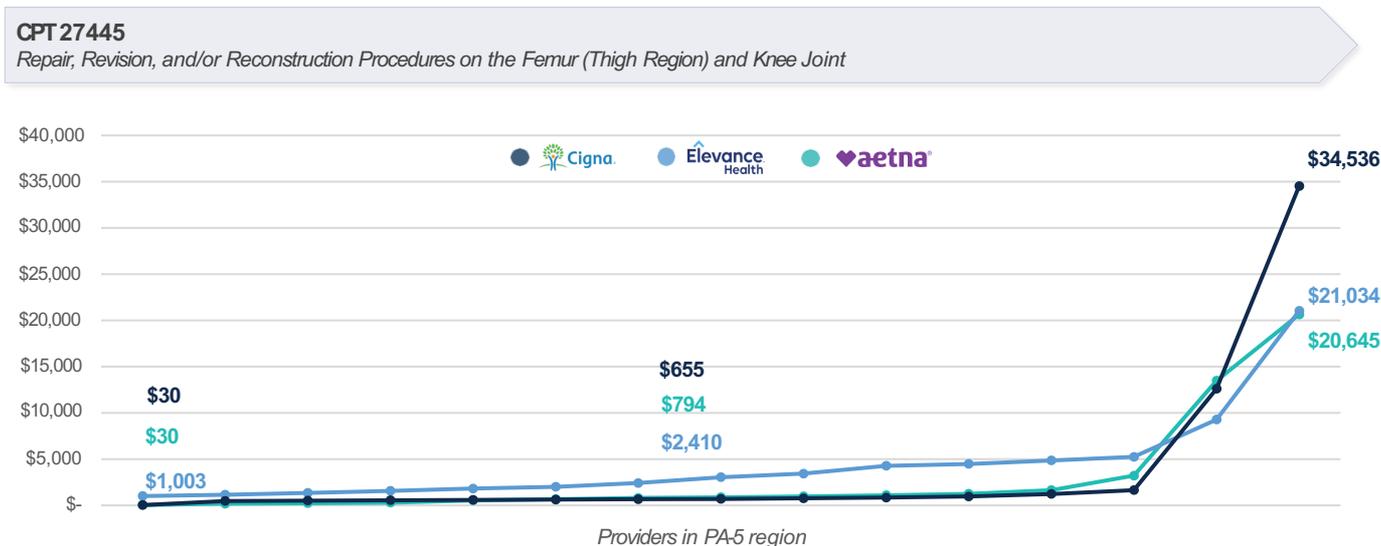
CPT 27445
Repair, Revision, and/or Reconstruction Procedures on the Femur (Thigh Region) and Knee Joint

Providers in PA-5 region

Fig 1: Illustrates the extreme difference in negotiated prices for a single service in the same location

Outlier analysis exposes data issues requiring resolution

Quality issues in MRF data can be identified through data quality analysis, utilizing data quality (DQ) rules. DQ rules should be designed to identify and address erroneous records, preventing their propagation through analytics. In this regard, we outline **five data issues** that need careful review when seeking solutions
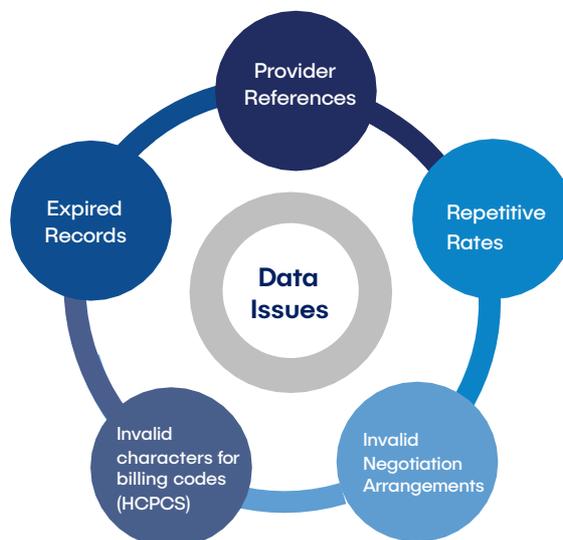

Fig 2: Data issues that need careful review when seeking solutions for better MRFs

1. Provider references:

CMS' Price Transparency Guide has been slightly misinterpreted by Payers, which has introduced the technique of provider references to improve MRF readability. This lack of clarity prevents the accurate pairing of providers with the correct negotiated prices, potentially violating CMS specifications. For instance, we identified four providers (using references) paired with 11 distinct negotiated prices for the same procedure for a national payer.

2. Repetitive rates:

Data analysis reveals that payers are complying with the mandate in an unhelpful manner. 27,000 services with the same negotiated rate of $79,429.6 have been discovered by CitiusTech's team. This makes it challenging for organizations to effectively utilize such data (refer to the list of services that have negotiated rates over $1 in Figure 3).
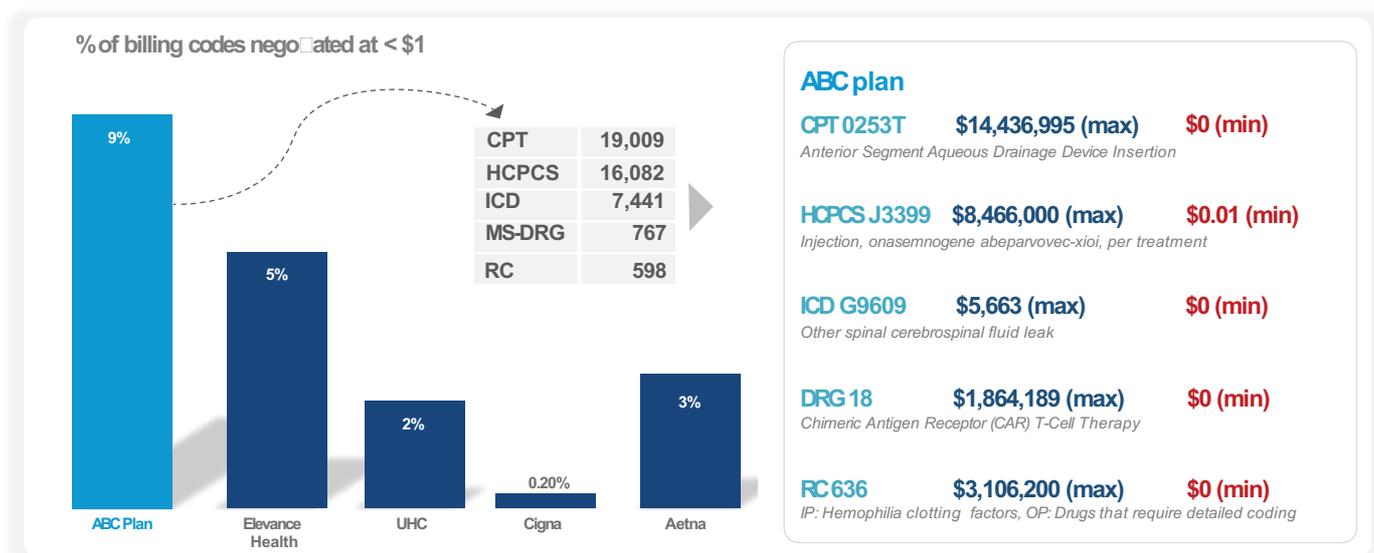

% of billing codes negotiated at < $1

CPT	19,009
HCPCS	16,082
ICD	7,441
MS-DRG	767
RC	598

ABC Plan: 9%
Elevance Health: 5%
UHC: 2%
Cigna: 0.20%
Aetna: 3%

ABC plan

CPT 0253T $14,436,995 (max) $0 (min)
Anterior Segment Aqueous Drainage Device Insertion

HCPCS J3399 $8,466,000 (max) $0.01 (min)
Injection, onasemnogene abeparvovec-xioi, per treatment

ICD G9609 $5,663 (max) $0 (min)
Other spinal cerebrospinal fluid leak

DRG 18 $1,864,189 (max) $0 (min)
Chimeric Antigen Receptor (CAR) T-Cell Therapy

RC 636 $3,106,200 (max) $0 (min)
IP: Hemophilia clotting factors, OP: Drugs that require detailed coding

Fig 3: Billing codes negotiated for over $1 each

03. Invalid negotiation arrangements:

CMS' Price Transparency Guide defines acceptable enumerated values for negotiation arrangements, including fee-for-service, bundled, and capitation. However, invalid values like custom, local, and default were found by CitiusTech, indicating that not all payers use CMS' validator tool.

4. Invalid characters for billing codes (HCPCS):

Our analysis identified a small subset of HCPCS codes that are entirely invalid or contain invalid characters. With the use of curated data validation rules, we can ensure that only clean and valid data enters the final data store.

5. Expired records:

MRFs contain the contractors no longer active info, leading to confusion when comparing negotiated rates. Publishing rates for billing codes from expired contracts undermines the accuracy of MRF data. While it is not mandatory for payers to maintain active codes, including rates for no longer active billing codes compromises data accuracy.

These data issues compromise the accuracy and validity of a payer's MRF data and reporting. Since the data originates from payers and their contract management and information systems, collaborating with experienced MRF data and technologists is crucial for identifying quality issues and cleaning up the data.

Strategies to Overcome MRF Data Challenges

The challenges mentioned above degrade or invalidate MRF data and limit its reliable insights. Solving these issues improves compliance and enhances the value of MRF data for strategic decisions. It enables organizations to do better contract negotiations, value-based arrangements, and market analysis.

Figure 4 demonstrates the challenges we have identified and four solution strategies that have proven effective in improving data validity for compliance and strategic insights.
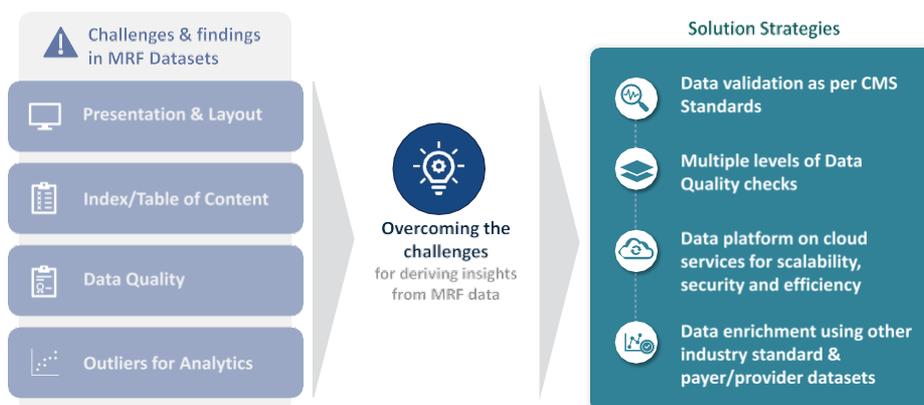

Fig 4: Four strategies to overcome MRF data challenges.

01. Conduct data validation

Despite CMS publishing a validator tool, our experience with MRFs and validation rules tells a different story. Many payers are not validating their MRFs through the validator process, resulting in incorrect or invalid data. For instance, negotiated rates for services in the same geographical area, con-tracted with the same

provider for the same service, have shown significant price variation across payers.

We recommend a three-step data quality process to prepare your data for analysis rigorously

I. Data assessment

Identify the standard limits of negotiated rates through benchmarking

II. Data transformation

Exclude records falling outside these limits, considering them outliers.

III. Data enrichment:

Augment MRF data with other relevant information to derive deeper insights.

02. Ensure data quality checks at multiple levels

Applying business rules to the ingestion and curation process is vital. This standardizes the data, removes apparent outliers, and facilitates the seamless generation of insights through analytics.

Data quality is paramount for accurate price transparency. Our data quality checks highlight erroneous data on a dashboard, enabling payers to address MRF issues without eliminating the data. The solution used can only be fully transparent when the published data is valid and reliable.

03. Data Enrichment

While MRF data is robust, its utilization is limited without enrichment. By integrating internal and external datasets, such as geography, utilization, and quality levels, the value of MRF data can be enhanced. These enriched datasets unlock additional use cases and support strategic decisions across the care continuum. For instance, combining core payer data with claims, utilization, and quality datasets can offer different insights for operational, financial, and business decisions.

This demonstrates the potential of utilizing MRF data to identify alternative care settings. When combined with provider performance and quality metrics, these insights become invaluable and have the potential to significantly impact business and financial negotiations, as well as strategic investments.

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