

ISSUER TRANSPARENCY DATA: LIMITATIONS AND OPPORTUNITIES

Scott Burns
Katherine Hempstead
Michael Cohen, PhD
Nick Shaneyfelt

Introduction

The requirement that insurers publicly post data on negotiated prices with providers has created excitement among researchers and policymakers. However, for many would-be users of the data (which is often referred to as [Transparency in Coverage](#) (TiC) data), that excitement has turned to disappointment. In attempting to work with the data, users have encountered significant barriers, such as large file size, extraneous and repetitive contracted price data, and a lack of context relative to utilization and geography, all of which have impeded widespread non-commercial use.

To provide a realistic sense of the user experience with the data, we here describe the results of an analytical exercise which attempts to understand contracted provider prices in the states of Michigan and Louisiana. The exercise represents a partnership between the actuarial consulting firm Wakely and Serif Health, a start-up that has specialized in ingesting and disseminating the TiC data for specific payers and regions. Our goal in presenting details of this experience is to increase understanding of barriers, inform efforts to surmount them, and produce recommendations for increasing the usability of TIC data.¹

Background on Transparency Data

The Transparency in Coverage rule went into effect on July 1, 2022, when insurers were required to begin publicly posting data on negotiated prices with providers.² Under the rule, issuers are required to post machine readable files detailing both negotiated rates for covered services and allowed amounts. Yet it soon became apparent that the data was so voluminous that only entities with powerful supercomputers were able to use the files. Further, some of that volume appeared to be unnecessary, as much of the submitted rate data described provider and procedure pairings that likely do not take place, such as an ear nose and throat specialists performing a back surgery. Further, insurers are uneven in the quality and timeliness of their submissions, and the data are not housed in a central location, requiring users to search health plan websites for files.

Despite these obstacles, there has been some non-commercial use of the data. Yet broader use has been impeded by difficulties with using the data. Researchers, consumer advocates, and members of Congress have called on CMS to increase standardization, create a standard repository, and take more actions to improve data quality. Thus far little has changed, with the result that the potential public benefits

¹ This analysis was conducted as part of a grant by the Robert Wood Johnson Foundation. Katherine Hempstead oversaw the efforts and was a key author of this paper. The authors are grateful for Robert Wood Johnson's support.

² <https://www.cms.gov/healthplan-price-transparency>

of the data have not been realized.^{3,4} Given the challenges, we attempted to use novel methods at pairing down the data such that observations were sensible and thus applicable to comparative analysis.

Methodology

Machine Readable File Aggregation – Serif Health

Serif Health provided aggregated flat file extracts that were collected from payers' machine-readable files (MRFs) on April 16th, 2023. Their approach relies on automated fetching and validation of each in-network file listed in the machine-readable Table of Contents (TOC) files posted by payers. Serif Health cuts through the redundant layout found in the MRF data and transforms the source MRFs into normalized, de-duplicated outputs.

For this analysis, Serif Health extracted the in-network rates represented by 50 service codes. Serif then narrowed the data collection to seven payers in Michigan and five payers in Louisiana based on market research of data quality and availability. For each payer, their team reviewed TOC files published at both a local and national level and targeted in-network file sets that met the following criteria⁵:

1. Identifiable individual and small group exchange plans within Michigan and Louisiana were prioritized. When these types of plans were not identifiable, plans with a description that identified a reasonably comparable commercial network were selected.
2. Compliance with CMS in-network file schema.
3. Provider information and negotiated rates were valid, non-null, non-zero; invalid were excluded.
4. In-network files containing > 90% redundant data with other files from the same payer were omitted.

Serif's processes produced normalized two-dimensional tables that related negotiated rates to lists of providers. These tables were split out by the individual payers selected for this study and then sent to Wakely for analysis.

Disaggregation and Filtering – Wakely Consulting Group

Serif's processing resulted in file sets containing nearly 28 million individual rates for the selected payers and regions. The processed files were more manageable than the original MRFs allowing Wakely's team the ability to edit the data using traditional office tools.

Analysis continued by examining the Michigan and Louisiana TiC data from the lowest possible level of aggregation, with the goal of recognizing and reducing redundancy by isolating rates with a high likelihood of being utilized in practice.

³ <https://www.healthaffairs.org/content/forefront/insurer-price-transparency-rule-has-been-disclosed>

⁴ <https://www.healthaffairs.org/content/forefront/health-plan-price-transparency-data-files-mess-states-can-help-make-them-better>

⁵ For a full list of the MRFs and associated plan lists that were used in the analysis is hosted online by Serif Health, for more information please contact Matt Robben (matt@serifhealth.com).

Data sets at this point were still aggregated to the level of a negotiated rate for any given procedure code. A rate/code combination was connected to a list of individual providers, who were referenced by their National Provider Identifier codes (NPI).⁶ The first table in Exhibit 1 shows an example of the how these NPI lists are connected to rates in typical TiC data. The second table shows the disaggregated form created by Wakely in which observations are unique to an individual NPI/rate/code combination. We refer to each of these combinations as a “unique rate.”

Exhibit 1: NPI Lists in TiC and Disaggregated Tables⁷

Payer	Region	Network	EIN	NPI List	Code	Rate
Aetna	LA	Aetna EPO	721413762	...	99244	137.08

1508020850, 1811448038, 1588686208, ...

Payer	Region	Network	EIN	NPI	Code	Rate
Aetna	LA	Aetna EPO	721413762	1508020850	99244	137.08
Aetna	LA	Aetna EPO	721413762	1811448038	99244	137.08
Aetna	LA	Aetna EPO	721413762	1588686208	99244	137.08
...

At this stage, all unique rates were restricted to plans within Michigan and Louisiana based on the MRFs collected by Serif Health. However, with observations reduced to the NPI level, any providers not located in those states could also be removed by filtering on geolocation data connected to each NPI.⁸

Further reductions were made by eliminating unique rates containing NPIs classified as “institutional” and service codes making use of any modifier codes. Both instances were filtered out due to inconsistent reporting across payers and providers.

Procedure Selection

After the initial filtering, a small subset of procedure codes was selected, with the goal of ensuring only reasonable NPI/procedure pairings. The necessity of this restriction became apparent when examining unique rates and recognizing frequent instances of unrealistic provider/procedure combinations, like optometrists being connected to rates for a full knee replacement.

This phenomenon appears to be widespread and suggests an opportunity to reduce redundancy in the original MRFs. However, identifying these unutilized rates at the MRF level is challenging due to ambiguity and overlap that exist for many providers and potential services. But at the NPI level, it

⁶ <https://nppes.cms.hhs.gov/#/>

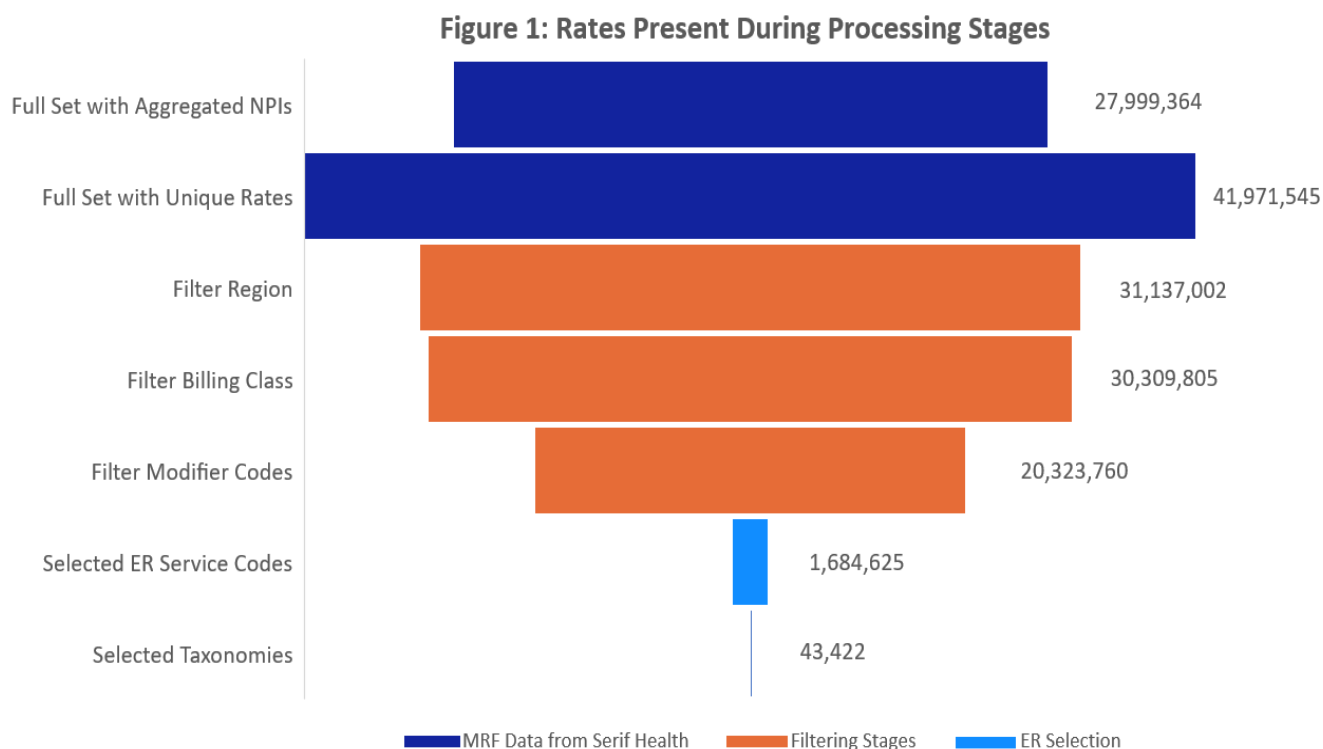
⁷ Author’s analysis of data provided by Serif Health collected from payer-posted machine-readable files. Original source: https://health1.aetna.com/app/public/#/one/insurerCode=AETNACVS_I&brandCode=ALICSI/machine-readable-transparency-in-coverage-on-4-16-2023

⁸ A comparative analysis was performed in Louisiana using the same methodology which yielded similar results to the analysis discussed.

appeared possible to find a small set of procedure codes and NPI classifications that cleanly mapped to one another.

Fortunately, a reliable mapping exists for emergency services, where some procedure codes are conveniently isolated to ER visits, and taxonomy codes connected to a provider’s NPI contain a classification for “Emergency Medicine Physicians.”⁹ For this reason, three specific ER procedure codes (99283, 99284, 99285) were chosen for analysis, as were providers with taxonomies contained in the emergency medicine classification. Other areas or services could be isolated using a similar approach, and emergency services were an area in which the authors felt delineation between providers would offer a clear contrast in highlighting how this data can be used.

Figure 1 shows the number of observations present in the data set at different stages of processing. The final restriction (“Selected ER Service Codes” to “Selected Taxonomies”), which retained only ER rates connected to ER providers, resulted in the removal of 1.6 million (or 97%) rates posted for all ER service codes.



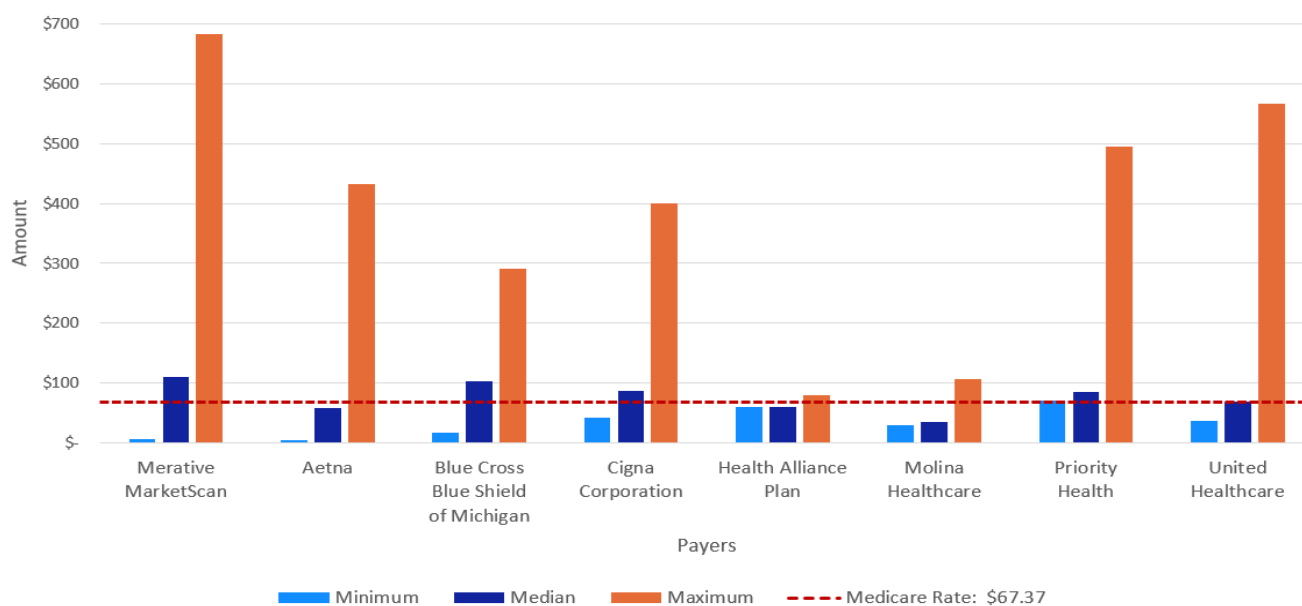
Source: author’s analysis of data provided by Serif Health collected from payer-posted machine-readable files. For a full list of the MRFs and associated plan lists that were used in the analysis is hosted online by Serif Health, for more information please contact Matt Robben (matt@serifhealth.com).

⁹ <https://taxonomy.nucc.org/>

Initial Findings

After selecting for potentially valid rates, Wakely attempted to compare those rates across payers and benchmark rates against realized values. For benchmarking purposes, TiC data was first compared to allowed Medicare amounts for the ER service codes, and then to rates collected by Merative™ MarketScan®, which includes commercial costs in Michigan and Louisiana (only Michigan results are shown here) during 2021.¹⁰ To make appropriate comparisons to TiC rates, MarketScan data were limited to the four most common emergency service categories, which accounted for more than 80% of all claims in MarketScan connected to the three ER- codes used for this study.

Figure 2: Price Transparency Rate Ranges for Emergency Room Service Code 99283 in Michigan Compared to MarketScan



Source: author's analysis of data provided by Serif Health collected from payer-posted machine-readable files compared to rates derived from Merative™ MarketScan® (<https://www.merative.com/real-world-evidence>). For a full list of the MRFs and associated plan lists that were used in the analysis is hosted online by Serif Health, for more information please contact Matt Robben (matt@serifhealth.com).

As shown in Figure 2, the median TiC values typically landed relatively close to the Medicare and commercial estimates. However, metrics which rely utilization like the mean and median should be used cautiously within TiC analysis, as they are based on frequency of a rate being included in the data, rather than the frequency of a service being rendered.

Perhaps a better comparison is the spread of maximum and minimum rates across payers. In this respect, the MarketScan spread is comparable to most of the included payers' TiC results, with the Medicare amount typically falling between the extremes, and maximum values hovering around 500%-1000% of

¹⁰ <https://www.merative.com/real-world-evidence>

Medicare. But exceptions exist as payers like HAP and Molina have maximum and minimum rates that do not stray far from the Medicare benchmark.

Conclusion and Future Work

This exercise represents an attempt to break through some of the noise present in TiC payer postings by limiting the data to feasible payer/provider relationships. Given the status of payers' posted rates, in which MRFs often fail to exclude or flag unutilized rates, such a reduction may be necessary to produce meaningful results.

But even after attaining a level of confidence through the elimination of unrealistic rates, the lack of utilization information present in TiC data still makes summary statistics potentially unreliable. Unknown utilization values also make comparisons across payers difficult, as even within our small sample of payers, the number of members and payments varies widely. The posting of rates without accompanying usage data also makes direct comparisons to commercial data sets challenging since those reports contain values based on varying payment frequencies and structures that go far beyond a single negotiated rate.

Regardless of the obstacles still in place, the publication of TiC data has proven to be a huge step towards providing a glimpse into the previously shrouded world of health care pricing. A potential next step made visible by this analysis is to eliminate unrealistic data now present in many TiC data sets. Possible advancement in this direction could happen by enacting a requirement to include utilization data alongside the provider/rate combinations. This requirement would immediately enhance the ability to filter out unutilized rates, potentially streamlining the path from posting to analyzing. Such a requirement could have the added benefit of producing more reliable metrics, enabling comprehensive and useful comparisons across payers and commercially available datasets.

This recommendation is not unique among all of the suggested changes in the TiC rules.¹¹ But perhaps this exercise highlights the potential for such a change to serve as an efficient and effective means for clearing multiple of the TiC initiative's primary obstacles.

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Please contact at michael.cohen@wakely.com with any questions or to follow up on any of the concepts presented here.

¹¹ <https://clarifyhealth.com/insights/institute/briefs/confronting-the-zombie-rate-apocalypse/>

OUR STORY

Five decades. Wakely began in 1969 and eventually evolved into several successful divisions. In 1999, the actuarial arm became the current-day Wakely Consulting Group, LLC, which specializes in providing actuarial expertise in the healthcare industry. Today, there are few healthcare topics our actuaries cannot tackle.

Wakely is now a subsidiary of Health Management Associates. HMA is an independent, national research and consulting firm specializing in publicly funded healthcare and human services policy, programs, financing, and evaluation. We serve government, public and private providers, health systems, health plans, community-based organizations, institutional investors, foundations, and associations. Every client matters. Every client gets our best. With more than 20 offices and over 400 multidisciplinary consultants coast to coast, our expertise, our services, and our team are always within client reach.

Broad healthcare knowledge. Wakely is experienced in all facets of the healthcare industry, from carriers to providers to governmental agencies. Our employees excel at providing solutions to parties across the spectrum.

Your advocate. Our actuarial experts and policy analysts continually monitor and analyze potential changes to inform our clients' strategies – and propel their success.

Our Vision: To partner with clients to drive business growth, accelerate success, and propel the health care industry forward.

Our Mission: We empower our unique team to serve as trusted advisors with a foundation of robust data, advanced analytics, and a comprehensive understanding of the health care industry.

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