

Healthcare Price Transparency: Data Overview and Best Practice

Yang Wang, PhD

Assistant Research Professor
Johns Hopkins University School of Public Health
March 10, 2025

Note: Please see my 1st video for **research summary** and implications for **policy** and **employer strategy**.

Scope of the 2 Price Transparency Data

	<u>Hospital Disclosed Data</u> ¹	<u>Insurer Disclosed Data</u> ²
Federal regulation (effective date)	Hospital Price Transparency Rule (initial Jan 2021, updated on Jan 2025)	Transparency in Coverage (TIC) Final Rule (July 2022)
Who disclose price?	Hospitals	Commercial insurers/plans
Provider service setting	Hospital facility	Hospital and non-hospital facilities; Professional services
Typical procedures	CMS-designated 70 shoppable services; emergency room visits	Common hospital and non-hospital services, physician care
Type of price (by market segment)	Chargemaster (list) prices; Negotiated prices in <i>commercial market</i> , <i>Medicare Advantage</i> , and <i>Medicaid Managed Care</i> ; Cash prices;	Negotiated prices in <i>commercial market</i>
Measure of price value	Hospital – Service – Insurer – Plan	Provider – Service – Insurer – Plan

Data Strengths

1. Enormous and representative price information ³
 - Hospital: 83% of the 5,000+ hospitals nationwide
 - TIC: 200+ insurers, including the 5 national carriers (BCBS, CVS, Cigna, Elevance, United Healthcare)
2. Granular price measure identifying individual ⁴
 - Provider (facility, clinician)
 - Service (DRG, CPT/HCPCS)
 - Insurer, plan
3. Publicly available; Up-to-date disclosure
4. Price values for common services consistent with commercial claims data ⁵

Data Limitations⁶

1. Subject to disclosure compliance, potential measurement errors
 - e.g. prices disclosed by providers not delivering such service (zombie rates)
2. Not all prices are directly comparable
 - not dollar-based prices, not fee-for-service mechanism
3. Lack of non-pricing information
 - utilization, quality, patient characteristics
4. Data has enormous size and complicated structure
 - require significant computational resources for data storage, process, and analysis

Best Practices for Analysis

1. Start with prices for common procedures, disclosed by major insurers, or larger hospitals^{7,8,9}
2. Standardize prices at provider – procedure – insurer level, using median prices if multiple values^{9, 10,11} Then go to more granular level, if needed.
3. Trim-off extreme price values (e.g. top and bottom 1%)^{8,9,12}
4. Regression analysis:
 - Log-transformed model to address the right skewness of prices^{8,12,13}
 - Fixed effects at service, insurer, provider, or geographic level to adjust for covariates^{7,8,10-13}

Best Practices for Analysis

5. Validation (price, provider, insurance). Merge with external data for non-pricing measures:⁷⁻¹³

- Provider characteristics
- Insurance enrollment
- Utilization and quality outcomes
- Aggregated area-level patient information

These practices also apply to general healthcare pricing analysis using other data sources (e.g. insurance claims).

Contact & Disclaimer

Contact me if you want to discuss more about data, research, or application:

- Dr. Yang Wang ywang406@jhu.edu
- LinkedIn: www.linkedin.com/in/yang-wang-jhsph; Twitter: @YangWang_JHU
- Personal website: <https://yangwanghealthecon.github.io/>
- Johns Hopkins Faculty Profile: <https://publichealth.jhu.edu/faculty/4431/yang-wang>

My research is funded by Arnold Ventures, and in collaboration with Dr. Ge Bai, Dr. Gerard Anderson, and other members from Johns Hopkins – Arnold Venture lowering private sector healthcare price grant.

Information and opinions expressed here are my own and not necessarily those of Johns Hopkins University or Arnold Ventures.

Reference

1. Centers for Medicare and Medicaid Services. 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. Fed Regist. 2019; 84(229): 65524-65606.
2. Transparency in Coverage. Centers for Medicare and Medicaid Services. October 26, 2020. <https://www.cms.gov/CCIIO/Resources/Regulations-and-Guidance/Downloads/CMS-Transparency-in-Coverage-9915F.pdf>
3. Moving into 2024: State of Price Transparency. Turquoise Health. Jan 4, 2024. <https://blog.turquoise.health/moving-into-2024-state-of-price-transparency/>
4. Wang Y, Xu JF, Meiselbach MK, Wang Y, Anderson G, Bai G. Insurer Price Transparency Rule: What Has Been Disclosed? Health Affairs Forefront. February 2023.
5. Wang Y, Meiselbach M, Anderson GF, Bai G. Hospital Pricing Information Consistent Between Transparency-In-Coverage Data And Other Commercial Data Sources. Health Affairs Forefront. November 2023.
6. Wang Y, Wang Y, Liu A, Anderson GF, Bai G. How to Analyze and Improve the Usability of Insurer Price Transparency Data? Health Affairs forefront. May 2023.
7. Wang Y, Meiselbach MK, Cox JS, Anderson GF, Bai G. The Relationships among Cash Prices, Negotiated Rates, and Chargemaster Prices for Shoppable Hospital Services. Health Aff (Millwood). 2023;42(4): 516-525.
8. Wang Y, Meiselbach MK, Xu J, Bai G, Anderson G. Do Insurers with Greater Market Power Negotiate Consistently Lower Prices for Hospital Care? Evidence from Hospital Price Transparency Data. Medical Care Research and Review. 2024;81(1):78-84.
9. Wang Y, Xu J, Anderson G. Within-Hospital Price Gaps Across National Insurers. JAMA Netw Open. 2024;7(12):e2451941.
10. Meiselbach MK, Wang Y, Xu J, Bai G, Anderson GF. Hospital Prices For Commercial Plans Are Twice Those For Medicare Advantage Plans When Negotiated By The Same Insurer. Health Aff (Millwood). 2023;42(8): 1110-1118. 10.
11. Wang Y, Marr J, Xu J, Meiselbach MK. Commercial Insurers' Market Power and Hospital Prices in Medicaid Managed Care. Health Serv Res. 2024; 1-6.
12. Wang Y, Wang Y, Plummer E, Chernew ME, Anderson G, Bai G. Facility Fees for Colonoscopy Procedures at Hospitals and Ambulatory Surgery Centers. JAMA Health Forum. 2023;4(12):e234025.
13. Wang Y, Plummer E, Wang Y, Cram P, Bai G. Comparison of Commercial Negotiated Price and Cash Price Between Physician-Owned Hospitals and Other Hospitals in the Same Hospital Referral Region. JAMA Netw Open. 2023;6(6):e2319980.