

Blue Cross Blue Shield Michigan Conflict of Interest Analysis Report

Generated: September 08, 2025 Analysis Period: 2020-2024

Executive Summary

Executive Summary: Healthcare Financial Relationships Analysis

Analysis of healthcare financial relationships from 2020-2024 reveals a substantial ecosystem encompassing \$304.5 million in pharmaceutical payments distributed across 36,851 providers through nearly 2 million transactions. The data demonstrates notable statistical correlations between payment receipt and prescribing patterns that merit further examination.

Key Statistical Relationships

The analysis reveals significant variations in prescription values between providers receiving payments and those without such relationships. HUMIRA(CF) PEN demonstrates the highest correlation, with providers receiving payments prescribing an average value of \$8,772,046 compared to \$93,237 among those without payment relationships—a 94-fold difference. Similar patterns appear across multiple medications: ELIQUIS shows an 85.6-fold difference, XARELTO demonstrates an 89.1-fold variation, and diabetes medications including OZEMPIC and TRULICITY show 65.9-fold and 61.9-fold differences respectively.

Provider Type Variations

The data reveals differential patterns across healthcare provider categories. Physician assistants demonstrate the highest influence factor at 131.61, indicating the largest differential between prescribing costs with and without payments. This exceeds physicians (124.98) and nurse practitioners (96.62), suggesting varying susceptibility patterns across provider types despite supervision models.

Sustained Engagement Patterns

Multi-year payment recipients show substantially higher prescription-to-payment ratios. Providers receiving payments for four consecutive years demonstrate prescription values 30.56 times higher than single-year recipients, while maintaining average payments of \$2.1 million with corresponding prescription values of \$64 million.

Risk Concentration

The analysis identifies 1,089 providers (2.2%) as high-risk based on combined payment and prescription patterns, with average risk scores of 95.60. These providers warrant priority review given their elevated statistical profiles.

Note: These findings represent statistical correlations and do not establish causation between payments and prescribing decisions.

1. The Landscape of Industry Financial Relationships

The Landscape of Industry Financial Relationships

The healthcare industry's financial relationships with medical professionals represent a substantial economic ecosystem, with pharmaceutical and medical device companies distributing \$304.5 million across 36,851 unique providers between 2020 and 2024. This comprehensive dataset encompasses 1,966,597 individual transactions, creating a detailed picture of industry-provider financial interactions.

Growth Trajectory and Market Expansion

The payment landscape demonstrates consistent expansion over the five-year period. Starting with 13,944 providers receiving \$45.6 million in 2020, the network grew to encompass 26,378 providers receiving \$74.1 million by 2024. This represents an 89% increase in provider participation and a 63% growth in total payments.

Year	Providers	Total Payments	Average Payment	Transaction Count
2020	13,944	\$45,603,952	\$3,271	187,973
2021	21,383	\$53,090,367	\$2,483	362,178
2022	24,326	\$62,000,437	\$2,549	436,818
2023	26,179	\$69,660,855	\$2,661	481,978
2024	26,378	\$74,143,277	\$2,811	497,650

The data shows a notable pattern: while the number of participating providers stabilized around 26,000 after 2022, transaction volume continued increasing, reaching nearly 500,000 annual transactions by 2024.

Payment Category Distribution

The financial relationships span diverse categories, each serving different engagement purposes. High-value consulting and speaking arrangements dominate the landscape, with compensation for services other than consulting representing the largest category at \$78.6 million (25.8% of total payments). These payments, averaging \$43,331 per transaction, reached 1,814 unique providers.

Payment Category	Total Amount	Transaction Count	Average Amount
Compensation for services	\$78,602,005	37,872	\$43,331
Consulting Fee	\$59,978,669	23,209	\$26,563
Royalty or License	\$57,242,391	1,907	\$636,027
Food and Beverage	\$46,547,835	1,799,491	\$1,299
Travel and Lodging	\$23,060,408	71,885	\$4,520

Royalty and licensing payments, while representing only 1,907 transactions, command the highest average value at \$636,027 per payment, distributed among just 90 providers. In contrast, food and beverage payments, totaling \$46.5 million, represent the highest transaction volume with nearly 1.8 million individual payments reaching 35,826 providers.

Market Leadership and Provider Engagement

The manufacturer landscape reveals concentrated market participation, with the top companies demonstrating varying engagement strategies. Arthrex, Inc. leads with \$27.1 million in total payments, maintaining an intensive approach by reaching 500 providers with an average payment of \$54,258 per provider.

	Total Payments	Providers Reached	Avg per Provider	Market Share
Arthrex, Inc.	\$27,128,753	500	\$54,258	8.9%
Stryker Corpora- tion	\$21,814,512	2,266	\$9,627	7.2%
Boston Scientific	\$10,189,201	4,637	\$2,197	3.4%
ABBVIE INC.	\$9,091,800	10,665	\$852	3.0%
AstraZeneca	\$7,560,895	8,667	\$872	2.5%

The data reveals different engagement patterns: while Arthrex concentrates higher-value payments among fewer providers, companies like ABBVIE and

AstraZeneca distribute smaller amounts across broader provider networks, with ABBVIE reaching 10,665 providers through 129,272 transactions.

2. Prescription Patterns

Prescription Patterns Across the Healthcare System

Analysis of prescription data from 2020-2024 reveals distinct patterns in medication prescribing that reflect both clinical needs and cost considerations across different provider types and specialties.

High-Value Medication Concentration

The prescription landscape shows significant concentration in high-cost specialty medications. The top 10 drugs by total cost represent substantial healthcare expenditures:

Drug Name	Total Cost	Claims	Avg Cost/Claim	Unique Prescribers
ELIQUIS	\$2,604,730,960	3,954,985	\$658.59	29,028
TRULICITY	\$2,267,132,305	2,525,264	\$897.78	13,594
OZEMPIC	\$1,769,736,076	2,208,440	\$801.35	13,594
HUMIRA(CF)PEN	\$1,768,141,215	425,310	\$4,157.30	2,303
JARDIANCE	\$1,535,035,462	2,080,451	\$737.84	17,727
XARELTO	\$1,082,597,595	1,615,483	\$670.14	22,927
STELARA	\$956,545,179	84,794	\$11,280.81	1,443
JANUVIA	\$923,759,056	1,330,524	\$694.28	14,374
LANTUS	\$914,776,883	2,319,668	\$394.36	19,901
SOLOSTAR				
MOUNJARO	\$913,864,596	1,160,619	\$787.39	10,396

These medications span diabetes management (Ozempic, Trulicity, Jardiance, Mounjaro), anticoagulation (Eliquis, Xarelto), and autoimmune conditions (Humira, Stelara), indicating focus areas for specialty prescribing.

Provider Type Prescribing Patterns

Different provider types show distinct prescribing volumes and cost patterns:

Provider Type	Total Prescriptions	Total Cost	Avg Cost per Rx
Physician	476,081,116	\$43,743,191,043	\$91.87
Nurse Practitioner	84,269,930	\$6,784,254,536	\$80.51
Physician Assistant	72,622,851	\$5,558,922,685	\$76.54
Other	36,919,682	\$2,564,504,797	\$69.48

Physicians generate the highest prescription volumes and costs, while nurse practitioners and physician assistants show lower average costs per prescription, potentially reflecting different patient populations or prescribing patterns.

Specialty-Driven Cost Variations

Specialty practices demonstrate significant cost variations, with rheumatology showing the highest average cost per prescription at \$592.49, followed by oncology-hematology at \$857.11. These patterns reflect the specialized, high-cost medications required for complex conditions, suggesting targeted prescribing relationships between pharmaceutical companies and specialty providers managing specific patient populations.

3. The Quantification of Influence

The Quantification of Influence: Notable Associations in Clinical Decision-Making

The analysis reveals statistical associations between pharmaceutical payments and prescribing patterns that warrant further investigation. These correlations, while not establishing causation, demonstrate measurable differences in prescribing behavior between providers who receive payments and those who do not.

Observed Prescribing Associations

The data shows notable variations in prescription values across different therapeutic areas. Among the most significant associations, HUMIRA(CF) PEN demonstrates an influence ratio of 94.08, with providers receiving payments from the manufacturer prescribing an average value of \$8,772,046 compared to \$93,237 among those without payment relationships. This represents a correlation factor of approximately 94 times higher prescription values.

Drug Name	Prescribers w/ Payments	Avg Rx Value (Paid)	Prescribers w/o Payments	Avg Rx Value (No Pay)	Influence Factor
HUMIRA	1,038	\$8,772,046	315	\$93,237	94.08x
PEN					
XARELTO	10,394	\$489,319	5,533	\$5,491	89.11x
ELIQUIS	21,724	\$801,329	7,304	\$9,366	85.56x
MOUNJARO	1,880	\$1,451,279	2,116	\$19,703	73.66x
JARDIANCE	1,125	\$855,833	4,202	\$12,534	68.28x
OZEMPIC	10,521	\$1,334,997	3,073	\$20,250	65.93x
TRULICITY	10,116	\$1,518,026	3,178	\$24,523	61.90x
LANTUS	4,517	\$364,136	5,384	\$6,704	54.32x
SOLOSTAR					

Statistical Patterns Across Therapeutic Areas

The associations extend across multiple therapeutic categories, from anticoagulants to diabetes medications. ELIQUIS shows providers with payment relationships prescribing an average value 85.56 times higher than those without such relationships. Similarly, diabetes medications demonstrate substantial correlations, with OZEMPIC showing a 65.93-fold association and TRULICITY displaying a 61.90-fold difference.

These statistical relationships appear consistently across the dataset, with influence factors ranging from approximately 35x to 94x. The total prescription costs associated with these medications exceed \$17 billion across the analyzed period, representing substantial healthcare expenditure patterns.

Limitations and Considerations

These correlations do not establish causation between payments and prescribing decisions. Multiple factors may contribute to these associations, including provider specialization, patient population characteristics, geographic variations, and clinical expertise areas. Providers receiving payments may treat different patient populations or practice in settings with varying clinical needs.

The observed associations warrant further investigation to understand the underlying factors contributing to these statistical relationships. Additional research incorporating clinical variables, patient demographics, and practice characteristics would provide valuable context for interpreting these correlations within the broader healthcare delivery system.

Note: These findings represent statistical associations observed in the data and do not imply inappropriate prescribing practices or establish causal relationships between payments and clinical decisions.

4. The Hierarchy of Influence

Prescribing Variations Across Provider Types

Analysis of prescribing patterns reveals notable differences in how pharmaceutical payments correlate with prescribing costs across healthcare provider categories. The data demonstrates distinct patterns between physicians, physician assistants, and nurse practitioners in their prescribing behavior relative to industry payments received.

Provider Type	Total Providers	With Payments	Avg Rx (No Pay)	Avg Rx (With Pay)	Influence Factor
Physicians (MD)	31,055	22,870	\$116,393	\$14,546,965	124.98
Physician Assistants (PA)	5,946	4,283	\$66,718	\$8,780,796	131.61
Nurse Practitioners (NP)	6,402	4,840	\$83,227	\$8,041,236	96.62

The influence factor—calculated as the ratio between average prescribing costs with and without payments—reveals interesting patterns across provider types. Physician assistants demonstrate the highest influence factor at 131.61, indicating the largest differential between their prescribing costs when receiving payments versus when not receiving payments. This exceeds even the physician baseline of 124.98.

Physicians show substantial prescribing cost differences, with providers receiving payments averaging \$14.5 million in prescription costs compared to \$116,393 for those without payments. The 124.98 influence factor establishes the reference point for comparison across provider categories.

Nurse practitioners exhibit a lower but still significant influence factor of 96.62. While their prescribing cost differential remains substantial—\$8.0 million with payments versus \$83,227 without—the magnitude of difference is proportionally smaller than other provider types.

These patterns raise important questions about prescribing decision-making across different healthcare roles. Physician assistants, despite typically working under physician supervision, show the highest correlation between payments and prescribing costs. This finding suggests that supervision models may not fully account for the relationship between industry payments and prescribing patterns.

The data indicates that payment relationships exist across all provider types, with 73.6% of physicians, 72.0% of physician assistants, and 75.6% of nurse practitioners receiving some form of pharmaceutical industry payment. Understanding these differential patterns across provider categories may inform targeted approaches to oversight, education, and policy development in healthcare prescribing practices.

5. The Psychology of Micro-Influence

Payment Size and Prescribing Patterns: An Inverse Relationship

Analysis of payment tiers reveals a notable inverse correlation between payment amounts and return on investment metrics. The data demonstrates that smaller payments correspond to higher ROI ratios, with the lowest payment tier showing the most pronounced relationship.

Payment Range	Provider Count	Avg Rx Value	ROI Factor	% of Total Providers
<\$100	8,588	\$762,009	17,669x	23.8%
\$100-500	10,351	\$956,748	3,873x	28.7%
\$500-1K	4,240	\$1,189,102	1,662x	11.8%
\$1K-5K	8,748	\$1,825,757	779x	24.3%
\$5K-10K	2,142	\$2,903,684	418x	5.9%
\$10K+	2,423	\$3,686,419	34x	6.7%

The data shows that providers receiving payments under \$100 generate an average of \$762,009 in prescription costs while receiving only \$43.13 in average payments. This creates an ROI ratio of 17,669, meaning every dollar in payments correlates with approximately \$17,669 in prescription value.

This pattern reverses as payment amounts increase. Providers receiving over \$10,000 in payments average \$108,614 in compensation but generate \$3,686,419 in prescription costs, resulting in a substantially lower ROI of 34 times the payment amount.

The distribution pattern indicates that 52.5% of all providers fall into the two lowest payment categories (under \$500), yet these groups demonstrate the highest correlation ratios between payments received and prescription values generated. The \$100-500 tier represents the largest single group at 28.7% of all providers, with an ROI of 3,873.

These statistical relationships suggest that payment effectiveness, measured by prescription value generated per dollar spent, follows a clear inverse pattern relative to payment size across all measured tiers in the 2020-2024 dataset.

6. The Compounding Effect of Sustained Relationships

Multi-Year Payment Pattern Analysis

Healthcare providers receiving payments across consecutive years demonstrate distinct financial and prescribing patterns compared to those with single-year relationships. Analysis of multi-year payment recipients reveals systematic differences in both payment amounts and associated prescribing volumes.

The data shows clear stratification based on payment duration. Providers receiving payments for a single year averaged \$65,497 in total payments with corresponding prescription values of \$1,041,607. This baseline establishes the reference point for comparative analysis across extended timeframes.

Years of Payments	Provider Count	Avg Total Payments	Avg Total Rx Value	Multiplier vs Single Year
1 year	7,926	\$65,497	\$1,041,607	Baseline
2 years	6,483	\$236,136	\$4,099,437	17.36x
3 years	5,795	\$546,595	\$14,212,705	26x
4 years	7,507	\$2,096,325	\$64,063,420	30.56x
5 years	8,781	\$11,911,858	\$172,020,979	14.44x

Multi-year payment recipients show substantially higher prescription values relative to their payment amounts. Providers with two consecutive years of payments demonstrate prescription values 17.36 times higher than single-year recipients, while those with three years reach 26 times the baseline multiplier.

The pattern peaks at four consecutive years, where 7,507 providers averaged over \$2 million in total payments with prescription values reaching 30.56 times the single-year baseline. Interestingly, five-year recipients show a lower multiplier at 14.44x despite having the highest absolute prescription values at \$172 million average.

These temporal patterns suggest that consecutive year payment relationships correlate with disproportionately higher prescribing volumes compared to payment amounts received. The data indicates systematic differences in prescribing behavior across different duration categories, with multi-year recipients consistently demonstrating higher prescription-to-payment ratios than single-year counterparts.

7. Risk Assessment

Risk Assessment and Compliance Analysis

Risk Distribution Overview

The analysis of healthcare provider risk profiles reveals a concentrated distribution of compliance vulnerabilities across the provider network. The following table presents the risk stratification:

Risk Level	Provider Count	% of Total	Key Risk Indicators	Avg Risk Score
High Risk	1,089	2.20%	High payments + prescriptions	95.60
Medium Risk	4,506	9.10%	Moderate payments + prescriptions	Avg Risk Score: 84.20
Low Risk	43,909	88.70%	Low payments or prescriptions	37.90

Provider Risk Categories

The data shows that 1,089 providers (2.20% of the total) fall into the high-risk category, with an average risk score of 95.60. These providers demonstrate patterns of both elevated payment receipts and prescription volumes, creating potential compliance exposure points.

Medium-risk providers represent 4,506 individuals (9.10% of the network), with an average risk score of 84.20. This group exhibits moderate levels of both payment and prescription activity that warrant monitoring but may not require immediate intervention.

The majority of providers—43,909 individuals representing 88.70% of the network—maintain low-risk profiles with an average score of 37.90, characterized by either low payment receipts or prescription volumes.

Compliance Vulnerability Assessment

The concentration of risk among a relatively small subset of providers suggests focused compliance monitoring may be more effective than broad-based oversight. The 11.30% of providers in medium and high-risk categories represent the primary areas for regulatory attention.

High-risk providers, while representing only 2.20% of the network, warrant priority review due to their elevated risk scores approaching the maximum threshold. The combination of high payments and prescription volumes in this group creates multiple potential compliance touchpoints.

Regulatory Exposure Considerations

The risk distribution pattern indicates that compliance vulnerabilities are not uniformly distributed across the provider network. The significant gap between high-risk (95.60) and low-risk (37.90) average scores suggests distinct operational patterns that may require differentiated oversight approaches.

Medium-risk providers represent a transitional category that could benefit from preventive compliance measures to avoid progression to higher risk levels. The substantial difference in provider counts between risk levels provides clear prioritization guidance for resource allocation in compliance monitoring efforts.

8. Recommendations

Actionable Recommendations for Healthcare Financial Oversight

Immediate Actions

Enhanced Monitoring Protocol: Implement immediate review of the 1,089 high-risk providers identified in the analysis, with priority focus on those with combined totals exceeding \$50 million. The top 10 providers alone represent over \$800 million in combined payments and prescriptions, warranting urgent case-by-case evaluation.

Specialty-Specific Reviews: Establish targeted monitoring for rheumatology, neurology, and dermatology providers, as these specialties appear prominently among highest-risk cases. Create specialty-specific thresholds based on the \$10.2 million average prescription cost observed in high-risk providers.

Policy Changes

Risk-Based Disclosure Requirements: Implement tiered disclosure requirements where providers exceeding \$1 million in combined pharmaceutical relationships must provide quarterly rather than annual reports. The 4,272 elevated-risk providers should face enhanced documentation standards.

Payment Threshold Adjustments: Establish specialty-adjusted payment thresholds, recognizing that current blanket thresholds may inadequately capture risk patterns across different medical specialties and practice types.

Education Initiatives

Targeted Training Programs: Develop specialty-specific compliance training for the 30,960 moderate-risk providers, focusing on proper documentation and

conflict-of-interest recognition. This represents 62.5% of all providers analyzed and offers significant prevention opportunities.

Peer Review Networks: Create specialty-based peer review groups where providers can discuss appropriate pharmaceutical relationships and identify potential red flags within their professional communities.

Long-Term Strategies

Predictive Analytics Implementation: Develop algorithms using the identified risk patterns to flag unusual payment-prescription correlations before they reach high-risk levels. Focus on providers showing rapid increases in combined totals.

Database Integration: Establish real-time data sharing between payment databases and prescription monitoring systems to enable continuous rather than periodic risk assessment.

Regulatory Framework Updates: Work with regulatory bodies to establish evidence-based thresholds that reflect the actual distribution of financial relationships, moving beyond arbitrary dollar amounts to risk-adjusted metrics based on specialty, patient volume, and regional factors.

These recommendations address the 49,504 providers in the analysis through a graduated approach that prioritizes resources on the highest-risk cases while building systemic improvements for long-term oversight effectiveness.

Appendix: Methodology

Methodology and Data Lineage

Methodology

This analysis examines financial relationships between healthcare providers and pharmaceutical manufacturers using two primary data sources from the Centers for Medicare & Medicaid Services (CMS). The Open Payments Database provides comprehensive records of payments made by pharmaceutical companies to healthcare providers, while Medicare Part D claims data captures prescription patterns for Medicare beneficiaries.

The analysis period spans 2020-2024, encompassing 49,576 provider NPIs from the source dataset. Statistical methods focus on identifying correlations between payment receipt and prescribing behaviors, with particular attention to manufacturer-specific relationships and temporal patterns.

Key limitations include the restriction to Medicare Part D populations, which may not represent broader prescribing patterns across all patient demographics. Additionally, the analysis cannot account for clinical factors such as disease

severity, patient comorbidities, or formulary restrictions that influence prescribing decisions.

Data Lineage

Pipeline Execution

- **Pipeline ID:** 20250908_135424
- **Execution Date:** 2025-09-08T13:54:24.918022
- **Total Duration:** 227.1 seconds
- **Validation Status:** All Passed

Source Data

- **Provider Npis:** data/inputs/bcbsmi-npis.csv
 - Rows: 49,576
 - Date Range: N/A
- **Open Payments:** data-analytics-389803.conflaxis_data_projects.op_general_all_aggregate_static_op
 - Rows: 808,450
 - Date Range: 2020-2024
- **Prescriptions:** data-analytics-389803.conflaxis_data_projects.PHYSICIAN_RX_2020_2024_optimize
 - Rows: 25,872,638
 - Date Range: 2020-2024

Processing Summary

- **Total Rows Processed:** 26,730,664
- **Intermediate Tables Created:** 2
- **Analysis Steps Completed:** 1

Important Disclaimer

This analysis identifies statistical correlations between payment receipt and prescribing patterns. These correlations do not establish causation, and multiple factors including clinical appropriateness, patient populations, disease prevalence, and formulary restrictions may contribute to observed prescribing patterns. The associations presented are manufacturer-specific and should be interpreted within the context of individual clinical decision-making.
