Innovating Revenue Integrity Through Advanced Analytics

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Learning Objectives

- Understanding data construct variation across clinical and revenue cycle
- Identify and navigate gaps in the consolidated data and validation steps with key clinical and revenue cycle stakeholders
- Understand tools and dashboards to support strategic decisions and change management initiatives

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Introductions

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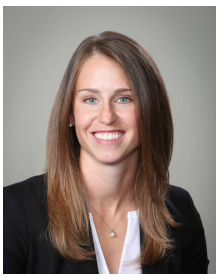

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Industry Disruptor

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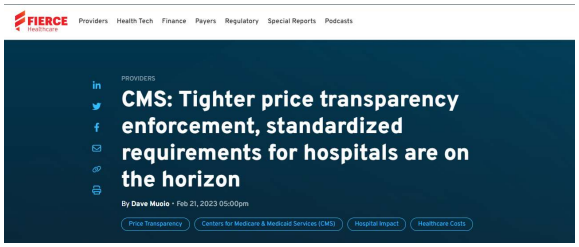
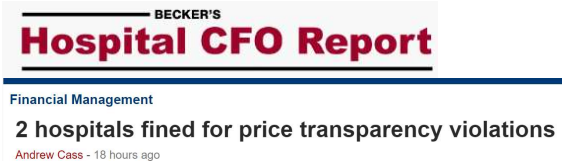
Increased Focus on Price Transparency

Centers for Medicare & Medicaid Services (CMS) leaders say the agency has handed out nearly 500 warnings to hospitals falling short on price transparency as of January [2023] and plans to streamline enforcement and standardize hospital reporting requirements.





Increased transparency will span most stakeholders. Required actions by all stakeholders will impact hospitals

https://www.fiercehealthcare.com/providers/cms-tighter-price-transparency-enforcement-standardized-requirements-are-horizon
https://www.beckershospitalreview.com/finance/2-hospitals-fined-for-price-transparency-violations.html?origin=BHRE&utm_source=BHRE&utm_medium=email&utm_content=newsletter&oly_enc_id=4524E8600090A6Y

Strategic Decisions for Revenue Integrity

Business Challenges

Business Challenges
Regulations help guide the industry and continue to change at a rapid pace. Hospitals have to be agile when making strategic decisions for their organization and for their patients

Organizational Acquisitions
The healthcare landscape is changing for health systems and providers

Charge Description Master (CDM) Structure
The CDM is the foundation for charging. Variations in structure can impact clinical workflow, maintenance efficiency and throughput of charges.

Financial systems & reporting
Consolidation of financial systems and reporting capabilities at the level of granularity is essential to make data-driven decisions

Pricing Methodology
There is the additional complexity of regulatory scrutiny due to price transparency. Many health systems have an increased focus to develop a strategic pricing methodology for chargeable services, supplies, and pharmaceuticals that is also defensible across payers and patients

Strategic Decisions for Revenue Integrity, continued

Industry Challenge: Supply and pharmaceutical pricing analysis includes understanding disparate data sets and how to align them to support strategic decision making. Aligning and ingesting the large and complex data sets have proven to be a significant hurdle to establishing a defensible pricing strategy.

Supplies	*Pharmacy*
Transition from a one-to-one charge structure to a one-to-many charge tiering structure	Enable programmatic and strategic updates to NDC and medication cost information

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From Data to Dashboard

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Data Inputs and Data Structure

Supplies and Pharmacy share similar data approaches and methodologies in addressing cost structure and markup methodology

Description	Supplies	Pharmacy
Masterfile	Item master/ mat mgmt. file	Formulary
Source base	Catalogue # / Manufacture #	NDC
Usage	Revenue & Usage Purchase History	Revenue & Usage Purchase History
Reference Files	Third party vendor(s) Industry benchmarks	Third party vendor(s) Industry benchmarks
Categorization (by price or item)	Supply category or cost tier	Medication category or cost tier
Other	Low-cost medications Non chargeable items	Low-cost items Study-based medications
Markup Methodology	Cost x Mark Up Flat Fee based on cost	Cost x Mark Up Flat Fee based on cost

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Challenges in the Data

Data exploration and analysis uncover unforeseen challenges and opportunities to build and ideal future state scenario

Disparate Data Sources
Increasing number of mergers and acquisitions has led to health systems with a mix of different IT systems and platforms. Gaining parity in the data between the disparate data sources is necessary to support meaningful analytics

Varying Operations
Mergers and acquisitions brings differing charge capture and billing operations from clinical staff that needs to be standardized and operationalized to ensure backend uniform billing practices

Non-Matching Items
Identification and utilization of master items inventory necessary to ensure alignment and reduce waste among supplies and medications. Regular maintained and upkeep required to keep master lists current and relevant to billing practices and standards

Historical Practices
Historical annual pricing review practices vary between legacy facilities and systems leading to necessary alignment and standardization for a defensible pricing methodology across the health system

Level of Detail
Achieving data at the same level of detail (e.g., facility, cost center, department, item) across the organization is necessary for meaningful comparison and analysis

Data Formatting
Data identifiers and item numbers vary among systems and site leading to duplication and mismatch for the same item used across the health system. Alignment review and regular maintenance necessary to reduce the redundancy

Unit of Measure
Obtaining data at the appropriate lowest unit of measure poses a challenge when upstream operational discrepancy in unit of measure is practiced

Data Extraction
Extracting specific backend data out of disparate systems to achieve alignment to source of truth front end financials continue to pose a time-intensive challenge for many clients

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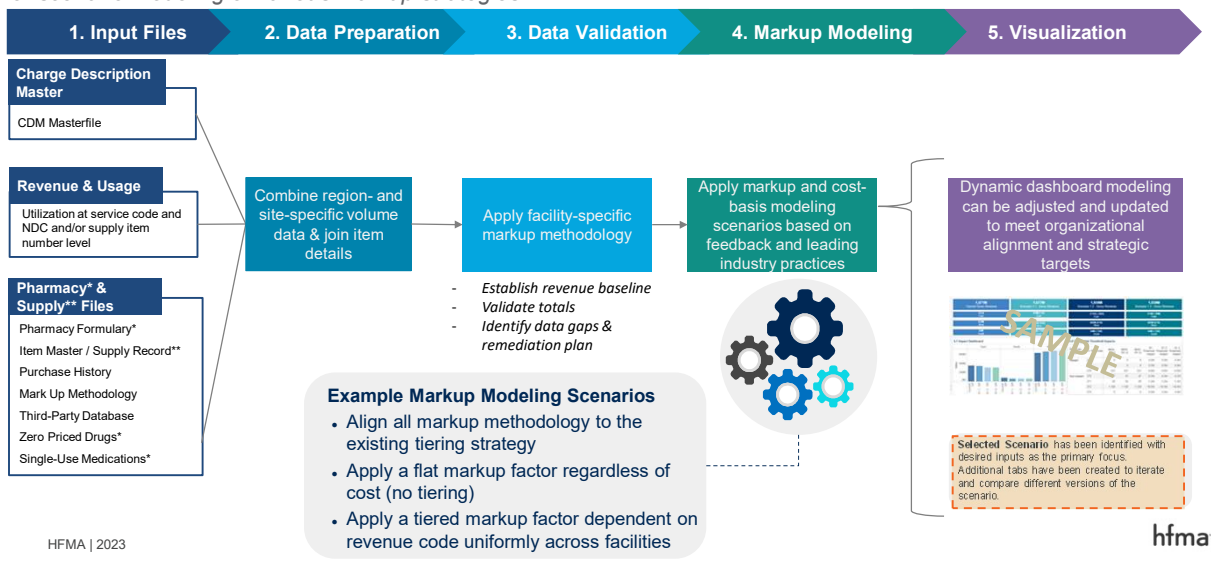
Data Elements and Development Process

The supply and pharmacy markup analysis combines the facility-specific item level details and volume data to allow for scenario modeling of various markup strategies



Example Markup Modeling Scenarios

- Align all markup methodology to the existing tiering strategy
- Apply a flat markup factor regardless of cost (no tiering)
- Apply a tiered markup factor dependent on revenue code uniformly across facilities

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Leading Practice Structure

Supplies and Pharmacy billing practices and management share similar leading practice structure to allow for efficient cataloging and categorization of master files

Supplies Example

Cost / Complexity Tier Mark Up

Cost Range ($)	Charge ($)
0.00 - 9.99	$20.00
10.00 - 19.99	$60.00
20.00 - 49.99	$150.00
50.00 – 99.99	$300.00
100.00 – 199.99	$500.00

Supply Category Mark Up

Level	Mark Up
Level 1	5
Level 2	4.5
Level 3	3
Level 4	3.5
Level 5	3

Pharmacy Example

Cost / Complexity Tier Mark Up

Cost Band	Mark Up
>$2,000	2
$500-$1,999	4
$1-$499	6
Less than $1	$2 Flat Fee

Medication Category Mark Up

Drug categorization	MarkUp Tier
Bulk	3.5
Blood Products	5
Chemotherapy (Oral/Injection)	5
Contrast Media/Isotopes	5
Controlled Substance (Oral/Injection)	5
IV Administration/Injection	5
Compound Standard	6

Key Highlights:

1. Creating a tiered or categorized structure will ***assist with file maintenance***
2. Source files are ***continuously updated*** regularly. Confirm you have captured all items during this process.
3. This structure helps you ***analyze and report*** on different categories and tiers

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Dynamic Dashboard and Visualization

Dynamic dashboard modeling the financial impact on gross revenue of varying markup methodologies enables strategic design of best-fit solution for the organization

Scenario Ideation

Brainstorming and idea collection with key internal/ external stakeholders to develop **leading scenarios** for modeling

	Current State	Scenario 1	Scenario 2	Scenario 3
Hosp A	Cost: AWP Mark Up: Tiered	Cost: AWP Mark Up: Tiered	Cost: AAC Mark Up: ATB	Cost: AWP Markup: ATB
Hosp B	Cost: AAC Mark Up: ATB	Cost: AWP Markup: Tiered	Cost: AAC Markup: ATB	Cost: AWP Markup: ATB

Modeling Evaluation

Executed model for comparison and fine tuning of scenario outcomes and determine best model to achieve **strategic direction**

	Current State	Scenario 1	Scenario 2	Scenario 3
Hosp A	$50M	$50M	$40M	$55M
Hosp B	$75M	$90M	$75M	$80M

Line-Item Validation

Line-level detail investigation of selected scenario model allows for validation of model performance

Scenario 3 — *Line-Item Detail*

	Current State	Scenario 3
Med 1	$5	$6
Med 2	$2	$70

Variance Investigation

Tools to assess large **changes at the line level** further aid in model performance and evaluation

Scenario 3

	Scenario 3	
Med 1	+$1M	*Large Positive Var*
Med 2	-$0.9M	*Large Negative Var*

Recommendations

Final recommendations developed as an outcome of reviewing and evaluating proposed scenario models to arrive at a best-fit solution for the organization:

Supplies

New charge categories associated with proposed OR charge structure based on cost range

Pharmacy

Cost basis alignment utilizing industry-standard cost and multi-year adjustment to single across-the-board markup across the organization

Supply Dashboard - Example

Dynamic dashboard modeling the financial impact on gross revenue of varying markup methodologies enables strategic design of best-fit solution for the organization

Supplies

Pharmacy Dashboard - Example

Dynamic dashboard modeling the financial impact on gross revenue of varying markup methodologies enables strategic design of best-fit solution for the organization

Pharmacy

Markup Changes by Site

	Before								After								Change							
	Current Markup								Future Markup								Markup Change							
Type	Hosp1	Hosp2	Hosp3	Hosp4	Hosp5	Hosp6	Hosp7	Hosp8	Hosp1	Hosp2	Hosp3	Hosp4	Hosp5	Hosp6	Hosp7	Hosp8	Hosp1	Hosp2	Hosp3	Hosp4	Hosp5	Hosp6	Hosp7	Hosp8
**Biosimilars	11.20	11.20	11.20	3.66	3.68	6.24	7.20	4.52	10.00	10.00	10.00	5.00	5.00	5.00	5.00	5.00	-1.20	-1.20	-1.20	1.34	1.32	-1.24	-2.20	0.48
**Contrast	5.00	5.00	5.00	2.55	1.48	6.00	6.40	5.07	12.00	12.00	12.00	5.00	8.75	8.75	8.75	8.75	7.00	7.00	7.00	2.45	7.27	2.75	2.35	3.68
**Other Injectable Therapy	14.57	14.57	14.57	7.05	6.62	5.80	11.50	6.97	12.00	12.00	12.00	5.00	8.75	8.75	8.75	8.75	-2.57	-2.57	-2.57	-2.05	2.13	2.95	-2.75	1.78
**Radiopharmaceutical Dx	4.53	4.53	4.53	2.12	4.33	6.64	3.05	2.43	12.00	12.00	12.00	5.00	8.75	8.75	8.75	8.75	7.47	7.47	7.47	2.88	4.42	2.11	5.70	6.32
**Radiopharmaceutical Tx	2.87	2.87	2.87	2.60	5.72			3.60	12.00	12.00	12.00	5.00	8.75			8.75	9.13	9.13	9.13	2.40	3.03			5.15
**Specialized Injectable	9.33	9.33	9.33	3.05	3.06	5.20	6.00	3.77	10.00	10.00	10.00	5.00	5.00	5.00	5.00	5.00	0.67	0.67	0.67	1.95	1.94	-0.20	-1.00	1.23
**TPN					15.86			20.00					8.75			8.75					-7.11			-11.25
*APAP/Aspirin/Ibuprofen	8.00	8.00	8.00	2.50	3.40	7.00	3.00	3.00	5.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00	-3.00	-3.00	-3.00	1.50	0.60	-3.00	1.00	1.00
*Bulk Therapy	7.65	7.65	7.65	3.00	2.55	2.90	5.00	3.95	5.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00	-2.65	-2.65	-2.65	1.00	1.45	1.10	-1.00	0.05
*Insulin	5.00	5.00	5.00	3.00	2.66	4.00	3.95	4.00	5.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00	0.00	0.00	0.00	1.00	1.34	0.00	0.05	0.00
*IV Solutions	18.50	18.50	18.50	17.00	33.98	32.67	30.00	29.00	5.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00	-13.50	-13.50	-13.50	-13.00	-29.98	-28.67	-26.00	-25.00
*Non Injectables	10.80	10.80	10.80	8.23	8.16	5.97	11.32	5.86	5.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00	-5.80	-5.80	-5.80	-4.23	-4.16	-1.97	-7.32	-1.86
*OTC Medications	10.00	10.00	10.00	3.00	7.93	9.00	5.00	5.00	5.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00	-5.00	-5.00	-5.00	1.00	-3.93	-5.00	-1.00	-1.00
*Supplies		8.00								5.00								-3.00						
Common Canister		6.00				6.00				5.00				8.75				-1.00				2.75		
Gas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Pharmacy- Pricing Model | Dynamic Model vs Actual Revenue

Draft- For Discussion Purposes Only

Dynamic Pharmacy Model

Region	Facility Grouping	Tot Rev	Scenario 3 Modeling Rev	Modeling Variance	Modeling Variance%
East	Hosp A	$155,938,963	$154,800,977	($1,137,986)	-0.73%
	Hosp B	$91,478,521	$88,938,840	($2,539,680)	-2.78%
	Total	$247,417,484	$243,739,818	($3,677,666)	-1.49%
West	Hosp C	$46,415,469	$46,383,805	$967,839	1.48%
	Hosp D	$7,777,587	$7,611,922	($166,665)	-2.13%
	Hosp E	$4,693,836	$4,446,279	($247,557)	-5.27%
	Hosp F	$205,265,907	$210,086,176	$4,820,268	2.35%
	Total	$283,153,000	$288,527,882	$5,374,882	1.90%
Grand Total		$530,570,484	$532,267,699	$1,697,216	0.32%

MarkUp Input- E-DH/MH: 2.39
MarkUp Input- E-NH: 2.6
MarkUp Input- W-NDH: 3.49
MarkUp Input- W-PH: 4
MarkUp Input- W-SH: 2.69
MarkUp Input- W-VBMC: 4.48

Dynamic Markup Inputs

Gross Impact of selected scenario

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Beyond the Data

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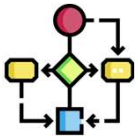
Change Management through Socialization

Engagement with key stakeholders and impacted parties required for collective understanding, constant refinement and consensus gathering for future-state solution

Workgroup Establishment

Cross-functional stakeholder workgroup with regular cadence to review, investigate and make key decisions on the impacts and outcomes of the solution. Workgroup members inclusive of accountable leaders and responsible parties work to evaluate solution at every level



Workflow Documentation

Examination and documentation of a sequence of work process from initiation to completion outline the current state workflow and gap identification in critical areas. Adjustments to existing workflows to support final solution must account for current state limitations

Roles and Responsibilities

RACI matrix identifies and describes the responsibilities by role in completing tasks to support the solution. Outlining the members of the team and specific tasks in the project brings clarity and efficiency in establishing the new process

Policies and Procedures

Establish and/or update guidelines to outline the organization's plan for implementation and maintenance of the solution. Collective development and agreement among the workgroup ensure success with executing the day-to-day operations to achieve the overarching action plan

Thank you.

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