

PART 17

HEALTHCARE SERVICES

Payer Mix, Net Patient Revenue, and the Revenue Cycle

Payer mix economics and reimbursement rate comparison, gross-to-net patient revenue waterfall, ASC 606 portfolio-based variable consideration, days in accounts receivable, denial management economics and overturn rates, 340B drug pricing savings calculation, Medicare cost report settlement accounting, HIPAA compliance costs, not-for-profit tax-exempt status and Form 990 requirements, False Claims Act compliance, and the complete healthcare revenue cycle metrics framework.

SECTION 1

THE HEALTHCARE SERVICES MODEL

Healthcare Services: The Most Regulated Financial Architecture in Commerce

Healthcare services — hospitals, physician groups, ambulatory surgery centers, skilled nursing facilities, home health agencies, behavioral health providers, and specialty care practices — operate under a financial architecture unlike any other in this series. The revenue cycle is complex beyond any other model: patients receive services, but rarely pay directly; instead, the provider submits a claim to a payer (Medicare, Medicaid, commercial insurance, or self-pay), which adjudicates the claim according to a contract rate or a fee schedule, denies some claims entirely, pays others at a fraction of the amount billed, and triggers a months-long back-and-forth of appeals and resubmissions. The amount the provider ultimately collects can be a small fraction of the amount initially billed.

This complexity is not incidental — it is structural. The US healthcare payment system has evolved over decades into a multi-payer environment where every transaction involves at least three parties (patient, provider, payer) and often four or five (adding PBMs, clearinghouses, utilization management firms, and referral networks). Every payer has its own contract, its own fee schedule, its own authorization requirements, and its own claims adjudication rules. The provider must navigate all of them simultaneously, across thousands of claims per day at any meaningful scale.

This part covers the complete financial architecture of healthcare services: payer mix economics and net patient revenue, contractual adjustments and their revenue recognition treatment, days in accounts receivable and the denial management discipline, 340B drug pricing economics, Medicare and Medicaid cost report settlement mechanics, HIPAA compliance costs, and ASC 606 applied to the variable consideration of healthcare revenue. Every concept is grounded in the practice of healthcare finance as experienced by CFOs of hospitals, physician groups, and specialty healthcare organizations.

1.1 The Healthcare Revenue Cycle at a Glance

Stage	Activity	Financial Impact	CFO Focus
Service Delivery	Patient receives care; charge capture in EHR	Gross charges generated at chargemaster rates	Charge capture completeness

Stage	Activity	Financial Impact	CFO Focus
Claim Submission	Claim submitted to payer (CMS-1500 or UB-04)	Claim enters payer adjudication queue	Clean claim rate; days to submit
Payer Adjudication	Payer approves, denies, or requests information	Payment, denial, or pending status	Denial rate by payer and reason code
Payment / EOB	Payer remits payment with Explanation of Benefits	Cash received; contractual adjustment recorded	Payment posting accuracy; contractual adj.
Denial Management	Denied claims appealed or resubmitted	Recovery of denied revenue	Denial overturn rate; net recovery %
Patient Responsibility	Co-pay, deductible, co-insurance collected	Self-pay revenue; bad debt risk	Patient collection rate; time to collect
Write-Off / Bad Debt	Uncollectible balances written off	Revenue reduction or bad debt expense	Write-off rate by payer type

SECTION 2

PAYER MIX AND NET PATIENT REVENUE

Payer Mix Economics: The Foundation of Healthcare Revenue

Payer mix — the distribution of revenue across Medicare, Medicaid, commercial insurance, and self-pay — is the single most important determinant of a healthcare provider's financial performance. Different payers reimburse at dramatically different rates, create different administrative burdens, and carry different collection risk profiles. A hospital with a favorable payer mix (high commercial insurance, low Medicaid) will generate significantly more revenue per unit of clinical service than one with an unfavorable payer mix, even with identical patient volumes and identical clinical quality.

2.1 Reimbursement Rates by Payer Type

Payer Type	Reimbursement Level	% of Chargemaster	Administrative Burden	Collection Risk
Commercial Insurance	Negotiated contract rates	60%–95% of charges	High (auth requirements; complex adjudication)	Low (insurer is creditworthy)
Medicare (FFS)	CMS fee schedule; DRG for inpatient	25%–45% of charges	Moderate (standardized; high volume)	Very Low (government payer)
Medicaid	State-determined rates (lowest reimbursement)	15%–30% of charges	High (state-specific rules; eligibility issues)	Low (government; slow payment)
Medicare Advantage	Plan-specific rates; often 95%–105% of Medicare	Similar to traditional Medicare	Higher than FFS (prior auth; referral requirements)	Low (plan-level creditworthy)
Self-Pay / Uninsured	Charity care policies; patient pay plans	5%–15% of charges (effective)	Low (no auth needed)	Very High (high bad debt)
Workers' Compensation	State fee schedules; often above Medicare	40%–80% of charges	Moderate (injury-specific; lien processes)	Moderate (adjuster approval required)

2.2 Gross Charges to Net Patient Revenue

The journey from gross charges (what the provider bills at chargemaster rates) to net patient revenue (what is actually collected) involves several layers of deductions. Contractual adjustments are the largest: the difference between the chargemaster rate and the contracted rate with each payer. Charity care adjustments cover services provided to patients who qualify for financial assistance. Bad debt adjustments cover amounts billed but ultimately uncollectible. The sum of these deductions — applied to gross charges — produces net patient revenue, which is the GAAP revenue line.

GROSS TO NET PATIENT REVENUE WATERFALL

Gross Patient Charges:	\$100,000,000	100%
Less: Contractual Adjustments:	(\$55,000,000)	55%
Medicare/Medicaid discount from charges		
Commercial payer contract discounts		
= Net Patient Service Revenue:	\$45,000,000	45%
Less: Charity Care:	(\$2,250,000)	5% of NPSR
Less: Bad Debt:	(\$1,350,000)	3% of NPSR
= Net Collected Revenue:	\$41,400,000	41.4% of gross charges

Collection Rate = Net Collected / Gross Charges = 41.4%

Net-to-Gross Ratio = Net Patient Revenue / Gross Charges = 45.0%

Key insight: Gross charges are nearly meaningless – all that matters is net

CFO INSIGHT

The net-to-gross ratio — net patient revenue as a percentage of gross charges — is an important structural metric for healthcare providers. However, it is heavily influenced by the chargemaster rate strategy: providers that set very high chargemaster rates (to allow maximum negotiating flexibility with commercial payers) will have lower net-to-gross ratios than providers with more conservative chargemaster rates. Do not compare net-to-gross ratios across healthcare systems without understanding their chargemaster strategies. The more meaningful comparison is net revenue per unit of service (per adjusted discharge, per encounter, per relative value unit).

SECTION 3**REVENUE RECOGNITION UNDER ASC 606**

ASC 606 in Healthcare: Variable Consideration at Scale

Revenue recognition for healthcare services under ASC 606 is governed by the variable consideration framework, applied at an unprecedented scale of individual transactions. The central challenge is that the amount the provider will actually collect for any given service is uncertain at the time the service is delivered. It depends on the payer's adjudication of the claim, the patient's insurance eligibility (which may have

changed since verification), whether prior authorization was properly obtained, whether the patient meets their deductible, and whether the claim will be denied and subsequently appealed. ASC 606 requires the provider to estimate this variable consideration — the net amount expected to be collected — and recognize revenue only at that estimated net amount, subject to the constraint that recognized revenue cannot include amounts that are highly probable to be reversed.

3.1 The Variable Consideration Constraint in Healthcare

Under the implicit price concession guidance in ASC 606, healthcare providers must estimate the transaction price net of expected contractual adjustments, charity care, and bad debt at the time of service delivery. This means a hospital cannot recognize \$10,000 of gross charges for an emergency visit and then later record contractual adjustments as a separate deduction — it must estimate the net amount at the outset and recognize only that amount as revenue.

The practical implementation of this requirement involves building a portfolio-based estimate of expected collections. Rather than making a claim-by-claim revenue recognition estimate (impractical at thousands of claims per day), providers group claims into portfolios with similar characteristics (same payer contract, same service line, similar patient demographics) and apply a historical collection rate to estimate the net revenue for each portfolio. This portfolio approach is explicitly permitted under ASC 606 when the individual-claim approach would not differ materially from the portfolio approach.

ASC 606 PORTFOLIO-BASED REVENUE RECOGNITION

For each payer/service line portfolio:

$\text{Gross Charges in Period} \times \text{Expected Net Collection Rate} = \text{Net Revenue}$

$\text{Expected Net Collection Rate} = \text{Historical Net Collections} / \text{Historical Gross Charges}$
(for same payer and service line combination, rolling 12 months)

Example Portfolio: Commercial Insurance – Outpatient Imaging

Gross charges this month: \$2,400,000

Historical collection rate (last 12 months): 68.3%

Net Revenue Recognized: $\$2,400,000 \times 68.3\% = \$1,639,200$

Actual collections in subsequent months reconciled to this estimate

Revenue true-up: if actual differs from estimate, adjust in period identified

3.2 Days in Accounts Receivable (DAR)

Days in Accounts Receivable (DAR) — the average number of days from service delivery to cash collection — is the most-watched operational metric in healthcare finance. It measures the efficiency of the revenue cycle and the speed at which net patient service revenue converts to cash. High DAR indicates slow claims processing, high denial rates, slow payer adjudication, or inadequate patient collection processes. Low DAR indicates a high-functioning revenue cycle with clean claims, fast payer response, and effective patient financial counseling.

DAYS IN ACCOUNTS RECEIVABLE

$$\text{DAR} = \text{Net Accounts Receivable} / (\text{Net Patient Service Revenue} / 365)$$

Example:

Net AR: \$28,000,000

Annual Net Patient Service Revenue: \$180,000,000

DAR: $\$28\text{M} / (\$180\text{M} / 365) = \$28\text{M} / \$493,151 = 56.8 \text{ days}$

Benchmarks by provider type:

Physician group: <35 days excellent; <50 days good

Hospital outpatient: <40 days excellent; <55 days good

Hospital inpatient: <50 days excellent; <65 days good

Skilled nursing: <35 days excellent; <45 days good

AR Aging: Track % of AR >90 days; >30% is a revenue cycle warning signal

SECTION 4

DENIAL MANAGEMENT AND THE REVENUE RECOVERY ENGINE

Denial Management: Recovering Revenue from Payer Friction

Claim denials — rejections by payers of submitted claims, either in whole or in part — represent one of the largest sources of revenue leakage in healthcare. The American Medical Association estimates that payers deny 5% to 10% of all claims initially, and that providers fail to successfully appeal many of those denials, leaving billions of dollars of earned revenue on the table annually. Effective denial management — the process of identifying, tracking, appealing, and preventing denials — is a direct revenue enhancement initiative that the healthcare CFO must own operationally, not delegate to the billing department.

4.1 Denial Economics

DENIAL RECOVERY ECONOMICS	
Monthly Gross Claims Submitted:	\$15,000,000
Initial Denial Rate:	8.5%
Claims Denied:	\$1,275,000
Without Denial Management Program:	
Recovery Rate (write-off most denials):	20%
Recovered Revenue:	\$255,000
Written Off:	\$1,020,000
With Active Denial Management Program:	
Overturn / Resubmission Rate:	65%
Recovered Revenue:	\$828,750
Written Off:	\$446,250
Annual Revenue Improvement: $(\$828,750 - \$255,000) \times 12 = \$6,885,000$	
Cost of Denial Management Program: \$500,000–\$1,200,000/yr	
Net Annual ROI: \$5.7M–\$6.4M (5:1 to 13:1 return on investment)	

Denial Category	Common Causes	Prevention Strategy	Typical Overturn Rate
Prior Authorization Missing/Incorrect	Auth not obtained or expired before service	Real-time auth verification at scheduling	40%–60% with proper documentation
Medical Necessity Denial	Payer disagrees that service was necessary	Clinical documentation improvement program	50%–70% with physician peer-to-peer
Eligibility / Coverage Issue	Patient not covered on date of service	Real-time eligibility verification at check-in	30%–50% (patient often responsible)
Coding Error (ICD-10 / CPT)	Incorrect or unsupported diagnosis/procedure code	Coder education; auditing program	70%–90% with corrected resubmission
Timely Filing Denial	Claim submitted after payer's filing deadline	Electronic submission; filing deadline tracking	20%–40% (limited appeal options)
Bundling / Unbundling	Payer applies bundling rules; denies separate claim	NCCI edit review before submission	30%–50% with documentation

SECTION 5

340B DRUG PRICING AND COST REPORTS

340B Drug Pricing and Medicare Cost Reports

Two financial programs are unique to the healthcare provider model and generate significant economic value when properly managed: the 340B Drug Pricing Program and the Medicare cost report settlement process. Both are complex, both are subject to regulatory scrutiny, and both require dedicated financial management expertise. Together, for eligible providers, they can generate tens of millions of dollars in annual benefit.

5.1 340B Drug Pricing Economics

The 340B Drug Pricing Program (created by Section 340B of the Public Health Service Act) requires pharmaceutical manufacturers to sell outpatient drugs to certain qualifying healthcare providers at significantly discounted prices — typically 25% to 50% below the average wholesale price. Qualifying providers include disproportionate share hospitals (DSHs), federally qualified health centers (FQHCs), rural health clinics, and certain children's hospitals. These entities can then dispense those drugs to patients at the commercial reimbursement rate, generating a significant spread — the 340B savings — between the acquisition cost and the reimbursement received.

340B SAVINGS CALCULATION

Drug A: Acquisition Cost at 340B Price: \$45 per unit

Drug A: Commercial Insurance Reimbursement: \$320 per unit

340B Savings per unit: $\$320 - \$45 = \$275$ (86% savings on acquisition)

Annual 340B Savings Estimate for FQHC:

Annual 340B-eligible dispensations: 50,000 units

Average 340B savings per unit: \$85

Total Annual 340B Savings: $50,000 \times \$85 = \$4,250,000$

Accounting: 340B savings appear as reduction in drug expense (COGS)

Not as revenue – the reimbursement received is standard revenue

The savings are the reduced cost of drugs acquired under the program

5.2 Medicare Cost Report Settlement

Medicare pays many providers through prospective payment systems (DRGs for inpatient, APCs for outpatient) that approximate the cost of providing services. However, certain cost elements — graduate medical education (GME) costs, disproportionate share hospital (DSH) payments, and bad debt reimbursement — are determined after the fact through the annual Medicare cost report, filed by each provider. The cost report reconciles the prospective payments received during the year against the allowable costs incurred, resulting in either a settlement payment from Medicare to the provider or a repayment from the provider to Medicare.

Cost report settlements are one of the most complex accounting items in healthcare finance. The cost report for a given fiscal year may not be settled for 2 to 5 years after the year-end, during which time the provider carries a cost report receivable (if it expects a settlement payment) or a cost report liability (if it expects to repay). The CFO must maintain actuarial-quality estimates of the expected settlement for each open cost report year and adjust those estimates as new information becomes available (CMS audits, reopenings, final settlements on prior years).

CFO INSIGHT

Medicare cost report receivables — the amounts the provider expects to receive from Medicare in settlement of open cost reports — are often material balance sheet items that are poorly understood by non-healthcare investors and lenders. A hospital system with five open cost report years may carry \$10M to \$30M in cost report receivables on its balance sheet, representing real economic value that can only be realized through the cost report settlement process. The CFO must be able to explain these receivables clearly, provide aging and probability-of-collection analysis, and update the estimates when CMS audits provide new information. Overstated cost report receivables are a common healthcare restatement trigger.

SECTION 6

HIPAA COMPLIANCE COSTS AND TAX ISSUES

HIPAA, Compliance Costs, and Healthcare Tax Issues

Healthcare providers face a compliance cost burden that is unique in its scale and specificity. HIPAA (Health Insurance Portability and Accountability Act) privacy and security requirements, the False Claims Act

exposure from billing errors, state healthcare regulation, and the complex tax treatment of not-for-profit health systems and physician compensation arrangements all create a compliance ecosystem that requires dedicated management and budgetary commitment.

6.1 HIPAA Compliance Costs

HIPAA Compliance Component	Annual Cost Range	Financial Risk of Non-Compliance
Security risk assessment (SRA)	\$20K–\$80K/yr	OCR audit; civil monetary penalties up to \$1.9M per violation category
Staff training (HIPAA privacy/security)	\$50K–\$200K/yr	Penalties; reputational damage; patient notification costs
Breach response program	\$100K–\$500K/yr (incident retainer)	Breach notification; OCR investigation; class action
Business Associate Agreement management	\$30K–\$100K/yr	Downstream liability for BA breaches
EHR security and access controls	\$200K–\$1M/yr	Data breach; ransomware; OCR investigation
Privacy officer and compliance staff	\$150K–\$600K/yr (FTE cost)	Systematic non-compliance without dedicated oversight

6.2 Not-for-Profit Healthcare: Tax-Exempt Status

The majority of US hospital beds are operated by not-for-profit (NFP) healthcare organizations that have obtained tax-exempt status under IRC Section 501(c)(3). Tax-exempt status provides significant financial benefits: exemption from federal and state income taxes, access to tax-exempt bond financing (which carries lower interest rates than taxable bonds), and eligibility to receive tax-deductible charitable contributions. In return, NFP health systems must operate for charitable purposes, cannot distribute profits to private shareholders, and must provide community benefit — including charity care, community health programs, and medical education — that justifies their tax-exempt status.

The IRS monitors NFP hospital compliance through Form 990 and Schedule H (reporting community benefit expenditures) and through compliance reviews. A recurring concern for NFP health systems is the adequacy of community benefit expenditures relative to the tax subsidy received. The CFO must ensure that community benefit is calculated and reported accurately on Schedule H, and that the health system's executive compensation (disclosed in Form 990, Part VII) is set at arm's length and supported by an independent compensation comparability study — a requirement for the rebuttable presumption that

compensation is reasonable.

SECTION 7

COMPLETE METRICS FRAMEWORK

The Healthcare Services CFO Metrics Framework

The healthcare metrics framework spans four domains: revenue cycle performance, clinical volume and productivity, cost efficiency, and financial health. The CFO must own the revenue cycle and financial health metrics directly and maintain visibility into volume and cost metrics as the primary drivers of financial performance.

7.1 Revenue Cycle Metrics

Metric	Formula / Definition	Benchmark
Net-to-Gross Ratio	Net Patient Revenue / Gross Charges	Highly variable; track trend not absolute level
Days in AR (DAR)	Net AR / (NPSR / 365)	<50 days hospital; <35 days physician group
Clean Claim Rate	Claims passing without errors / Total claims	>95% target; <90% indicates coding/billing issues
Initial Denial Rate	Claims denied on first submission / Total submitted	<5% excellent; >10% requires immediate intervention
Denial Overturn Rate	Appealed denials overturned / Total appealed	>60% target; <40% signals inadequate appeal process
Net Collection Rate	Net Collections / Net Patient Revenue less Charity	>98% excellent; <95% signals significant bad debt issue
Cost to Collect	Revenue Cycle Operating Cost / Net Collections	<3% excellent; >5% indicates operational inefficiency

7.2 Volume and Financial Health Metrics

Metric	Formula / Definition	Benchmark
Adjusted Discharges (hospital)	Inpatient discharges x (1 + Outpatient Rev / Inpatient Rev)	Primary hospital volume metric; track YoY
Revenue per Adjusted Discharge	Net Revenue / Adjusted Discharges	Rising = favorable payer mix or efficiency improvement
Payer Mix %	% of revenue by payer type (Medicare, Medicaid, Commercial)	Track shift; commercial % rising is favorable
Operating Margin %	Operating Income / Net Revenue	>3% NFP hospitals; >5% for-profit target
Days Cash on Hand	Cash and Investments / (Operating Expenses / 365)	>150 days excellent NFP; <60 days is a concern
EBITDA Margin	EBITDA / Net Revenue	>10% hospital; >15% physician group target
340B Program Savings	Acquisition cost savings under 340B / Net Revenue	Track as % of net revenue; important for eligible providers

SECTION 8

CFO OPERATING CHECKLIST

The Healthcare Services CFO Checklist

Revenue Cycle

- Net patient revenue recognition policy documented using ASC 606 portfolio approach: collection rate estimates by payer/service line portfolio updated monthly using trailing 12-month actual collection data.
- DAR monitored weekly; AR aging report reviewed weekly by payer; accounts >90 days old reviewed by revenue cycle director; self-pay AR segregated and managed with separate collection protocol.
- Denial management program active: denial rate tracked by payer and denial reason code; top 5 denial categories by dollar value have dedicated prevention and appeal workplans.
- Cost report estimates maintained for all open cost report years: estimate updated within 60 days of any CMS audit finding or settlement on a comparable year; receivable/liability classified correctly on balance sheet.
- 340B program compliance monitored: annual 340B audit completed; split-billing system operational if required; savings tracked monthly and reconciled to drug expense account.

Compliance and Tax

- HIPAA Security Risk Assessment completed annually: findings remediated within 90 days; breach response plan tested annually; Business Associate Agreements current for all vendors with PHI access.
- Form 990 and Schedule H community benefit reporting prepared accurately: community benefit calculation methodology documented; executive compensation comparability study completed for all officers and key employees.
- False Claims Act compliance program operational: coding audit performed quarterly; physician compensation arrangements reviewed annually by independent counsel for Stark Law and Anti-Kickback compliance.
- CMS Conditions of Participation compliance maintained: accreditation survey preparation continuous; CFO sign-off on any financial arrangements that could create compliance risk.

Closing Perspective: The Healthcare CFO

Healthcare finance is the discipline of generating revenue from a system that was not designed to make revenue generation easy. The payer-provider-patient triangle creates friction at every step — friction in claims submission, in adjudication, in collection, in cost report settlement, and in contract negotiation. The healthcare CFO who treats this friction as a fixed feature of the landscape — an irritant to be endured — will manage a revenue cycle that leaks money at every stage. The CFO who treats it as an operational problem to be engineered and managed will build a revenue cycle that converts clinical services into cash with precision and speed.

The most important financial insight in healthcare is that clinical quality and financial performance are not opposites — they are the same goal expressed in different languages. Accurate coding is both a compliance imperative and a revenue optimization tool. Denial prevention requires clinical documentation improvement, which is also a quality of care imperative. Patient financial counseling that reduces bad debt also improves patient satisfaction and compliance with treatment plans. The CFO who builds the financial architecture that aligns clinical and financial incentives is the CFO who serves both the mission and the margin.

Part 18 examines the Education and EdTech model — tuition revenue recognition by term, Title IV compliance and the 90/10 rule, refund liability under R2T4, accreditation costs, deferred revenue for multi-year enrollments, instructor cost structure, and the platform economics of online education.

End of Part 17: Healthcare Services | Financial Architecture of Different Business Models

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