Lean Cost Accounting for the Medical Practice

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Doctors Management LLC, Knoxville, Tenn.

Frank Cohen does not have a financial conflict to report at this time.
Learning Objectives

• Explain the concept of Lean Cost Accounting using RBRVS

• Calculate costs and break-even amounts per procedure

• Assess the profitability of any contract

What is a Resource Based Relative Value Scale?

- The RBRVS is a relative value scale that is based upon the consumption of resources, not a measurement of costs.
- Developed by the Cambridge Health Education Group.
- Adopted by HCFA in 1992 as the official methodology for determining the physician component of the Medicare Fee Schedule.
- Values are adjusted by geographic factors, based on the market location of the Medicare carrier.
Uses of the Relative Value Scale

- Developing fees for new and existing practices
- Cost Accounting
- Resource Allocation
- Physician compensation issues
- Productivity studies
- Break even and profit/loss analysis
- Managed care contract analysis
- PMPM capitation cost analysis

Understanding the RBRVS Model

- **Relative Value Unit (RVU)**
  - The standard unit of measurement in the RBRVS
  - Assign a value for consumption of resources for a service or procedure (event)

- **Geographic Adjustment Factor (GAF)**
  - Made up Geographic Practice Cost Indices (GPCI)
  - Used to adjust the value regionally for cost variances

- **Conversion Factor (CF)**
  - Used to convert an RVU to a fee
Relative Value Components

- **Work Related (RVU_WK)**
  - Measures the time and effort required by the provider to deliver the specified service

- **Practice Expense Related (RVU_PE)**
  - Measures the costs associated with the performance of the procedure

- **Malpractice Expense Related (RVU_MP)**
  - Adjusts for Educational offset
  - Considers risk factors

Work Related RVU

Based on two components

- **Time**
  - Pre-service
  - Intra-service
    - Face to Face time for non-surgical
    - Skin to Skin time for surgical procedures
  - Post-service

- **Intensity**
  - Physical effort and skill
  - Mental effort and judgment
  - Stress from iatrogenic risk
  - Tied to intra-service time
Practice Expense RVU

• Top-down approach
  ▪ Developed specialty-specific cost pools
  ▪ Allocated to individual services

• Practice expense by hour
  ▪ Total non-physician payroll (including fringe benefits)
  ▪ Administrative payroll (including fringes for non-clinical staff)
  ▪ Office and facility expenses (rent, depreciation, utilities)
  ▪ Medical supplies (disposable supplies, i.e., drugs, x-ray films)
  ▪ Medical equipment (lease, rental, depreciation)
  ▪ All other expenses (L&P, accounting, consulting)

• Estimated total hours by specialty (Harvard/RUC)
• Allocation of specialty-specific estimates of cost to procedures performed by that specialty

Geographic Adjustment Factor

• Locations based upon intermediary market area
• Made up of Geographic Practice Cost Indices (GPCI)
  • Work Related
    ▪ Measures work value by region
    ▪ No value is less than 1.00 (1.50 for Alaska)
  • Practice Expense Related (GAFPE)
    ▪ Adjusts for regional costs, i.e., rent, salaries, etc.
  • Malpractice Expense Related (GAFMP)
    ▪ Measures cost of malpractice by region
Location, Location, Location

• **Non-Facility**
  - Procedure done within the physician’s office or extension of their office
  - Practice expense is greater, therefore
    - Reimbursement amount is greater

• **Facility**
  - Procedure done in a facility other than the physician’s office
  - Practice expense is less, therefore
    - Reimbursement amount is less

• **Designation only affects the practice expense RVU**

• **Not all procedures have both values**

• **Only indication is on CMS 1500 form (Box 24b)**

Calculating The Total RVU

• **Adding the components without adjusting by GAF results in a geographically neutral total RVU.**
  - \( RVU_{wk} + RVU_{pe} + RVU_{mp} = RVU_{tu} \)

• **Factoring the GAF results in a geographically adjusted total RVU**

• **First, factor each RVU component by the corresponding GAF component and then get the sum of the products, as follows:**
  - \( RVU_{tot} = (RVU_{wk} \times GPCI_{wk}) + (RVU_{pe} \times GPCI_{pe}) + (RVU_{mp} \times GPCI_{mp}) \)
GAF and RVU Sample Values

- Geographic Adjustment Factors
  - Work component: 1.000
  - Practice Expense component: 0.946
  - Malpractice component: 1.268

- RVU components are as follows:
  - Work component: 2.00
  - Current non-facility practice expense component: 1.51
  - Current facility practice expense component: 0.74
  - Malpractice component: 0.10

Sample Non-Facility RVU Calculations

- \( (RVUWK \times GAFWK) + (RVUPENF \times GAFPE) + (RVUMP \times GAFMP) \)
- OR \( (2.00 \times .990) + (1.51 \times 1.029) + (.10 \times 2.566) \)
- OR \( 1.980 + 1.554 + 0.257 \)
- and this equals: 3.791

- To obtain the approximate Medicare fee amount, multiply the RVUTOT times the CF as follows:
  - \( 3.791 \times \$ 35.9996 = \$136.47 \)
Sample Facility RVU Calculations

- \((RVUWK \times GAFWK) + (RVUPEF \times GAFPE) + (RVUMP \times GAFMP)\)

- OR \((2.00 \times 0.990) + (0.74 \times 1.029) + (0.10 \times 2.566)\)

- OR \(1.980 + 0.761 + 0.257\)

- and this equals: \(2.998\)

- To obtain the approximate Medicare fee amount, multiply the RVUTOT times the CF as follows:

  - \(2.998 \times \$35.9996 = \$107.93\) (vs. 136.47)

Factoring for Modifiers

- A modifier is used to alter or enhance the manner in which a procedure or service is performed or delivered
  - A modifier does not change the description

- Two major modifier categories:
  - Those that affect the reimbursement (26, 50, 51, 82, etc.)
    - Also affect the value of the RVU
  - Those that don’t affect the reimbursement (24, 25, 59, etc.)
    - Do not affect the value of the RVU

- If a modifier changes the reimbursement, it should also change the value of the RVU using the same ratio.
Check Which Component to Adjust

- Work RVU should be adjusted only for modifiers that affect physician work effort
- Practice expense RVU should be adjusted for procedures that affect fixed and variable expense
- Be careful not to factor RVUs for modifiers that reflect productivity variances
  - -62, -80, AS, etc.

For Example . . .

- Modifier 80 (Assistant Surgeon) pays at 16% of allowable charge
- Should the RVU value be reduced to 16%?
  - Yes, if you are paying the physician
  - No, if you are the physician
- Modifier 50 (bi-lateral procedure) pays at 150% (sometimes).
- Should the RVU value be increased?
  - Yes, but only the work RVU
What is the Conversion Factor?

- The Conversion Factor (CF) is a dollar amount that is multiplied by the RVU to convert the RVU value into a fee.
  - For CY 2013, for Medicare, it was 34.0230
  - For CY 2014, for Medicare, it is 35.8228
  - For Q3 Q4 2015, for Medicare, it was 35.9335
  - For 2016, for Medicare, it was 35.8043
  - For 2017, for Medicare, it was 35.8887
  - For 2018, for Medicare, it is 35.9996
  - be used to measure individual and group values within an existing fee schedule.

- To obtain the approximate CF for any procedure, you need the current fee and the assigned RVU value
  - Divide the fee by the adjusted total RVU
  - If the fee is $617 and the RVU is 14.197:
    - Fee / RVUTOT = CF
    - OR
    - $617 / 14.197 = 42.22
Categorical Distribution - Major

- CF values should be calculated by Major Code Categories (at least!)
  - Surgery  10000 – 69999
  - Radiology  70000 – 79999
  - Pathology  80000 – 89999
  - Medicine  90000 – 99999 (exc. 99201-99499)
  - E/M       99201 – 99499
  - HCPCS II  A0000 – Z9999
# Building the Spreadsheet

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- In the first few columns, put the procedure code with modifier if any, the fee amount, the annual frequency, the adjusted RVU, the total fee amount, the Medicare Fee Schedule amount and the conversion factor.

# Totaling Fees and RVUs

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- The first step is to calculate the grand total for charges and the RVUs

**Totals**

- $223,384
- 4455.81
Key Input Variables

- For each procedure code/modifier group:
  - Charge and Annual frequency (TPY)
  - RBRVS individual RVU values
  - Total geographically adjusted RVUs
  - Total billed amount (charges or production)
  - Average collection amount (code, category or practice)

- Use the following data for the location:
  - Total charges for the data period
  - Total practice expense (CODB)
  - Broken out by category (fixed, variable, etc.)
  - Average collection as a percent of gross charges
  - By payer, major code group, code, etc.
  - Physician compensation packages

Benchmark = 80% of charges included in table assigned to codes with RVU values
- Gives high confidence level
- May have to exclude business centers
  - Most common for laboratory/pathology

Supply and J-codes are excluded (no RVU values)
- Cost analysis for these is straightforward
  - We know cost and reimbursed (so we know P/L)

Follow RVUPE for total cost definition
- Includes fixed, overhead and variable

Physician expense should not include bonus distribution
- Consider issues for ‘eat what you treat’ compensation models
RVU Density Example

- RVU-based procedures account for 69.94% of total frequency and 87.83% of total charges
- Charges represent the critical metric; not frequency

Example of Carving Out Codes

- J-codes represent 32% of total charges
  - 79% of frequency by codes with RVUs, but only
  - 67% of charges by codes with RVUs
- Remove J-code representation
  - Eliminate from gross charges (calculated)
  - Eliminate expenses (known)
  - Eliminate revenue (known)
- Run cost accounting analysis as if no J-codes
- Conduct drug analysis separately
  - Revenue – cost = profitability
- Add results back into the analysis
A Word about Expense Categories

- Based on RVUPE development
  - Total non-physician payroll (including fringe benefits)
  - Administrative payroll (including fringes for non-clinical staff)
  - Office and facility expenses (rent, depreciation, utilities)
  - Medical supplies (disposable supplies, i.e., drugs, x-ray films)
  - Medical equipment (lease, rental, depreciation)
  - All other expenses (L&P, accounting, consulting)

- In addition, physician expense should be defined
  - Salaries, bonuses, leases, staff, education, etc.

- Broken out into four primary categories
  - Fixed expenses
  - Variable expenses
  - Direct expenses (restricted to provider productivity studies)
  - Owner compensation

Application of Expense Categories

- Breakdown allows for investigational analyses

- Total expenses
  - Global “big picture” cost analysis
    - Internal benchmarking
    - Total expenses (less owner distribution) and total RVU

- Fixed and Variable expenses
  - Investigational Costing analysis
    - Fixed + Variable and PE + MP components

- Adjustments for physician compensation
  - Work RVU only for compensation issues
  - Managed Care (Total RVU)
    - Fixed and variable expense
    - Adjust physician comp using actual base salary or national data
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### Calculating Expense Percent

- Divide the expense amount by the total gross charges.
- Multiply that expense percent by the gross charges in the sample set.
- This number will equal the costs required to generate the charges for those services in the sample set.
Example of Expense Percent

- The practice generates $3,000,000 in charges
  - $1,181,897 are calculated as expenses
- Divide expenses into gross charges
  - $1,181,897 / $3,000,000 = .394 or 39.4%
- $2,503,500 in charges are represented in the data set
  - $496,500 in procedures do not have RVU values
- Multiply the represented charges by the expense percent to get the dollar cost for the sample set
  - $2,503,500 times 39.4% = $986,379

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- Divide sample cost by the Total RVUs to get the Cost per RVU
  - $986,379 / 32,443.91 = 30.40
- Note Cost per Unit in comparison with Medicare CF
Profitability Under Medicare

- The Medicare CF indicates allowable amount, not reimbursement amount
  - Reimbursement dependent upon participation status
- If Cost per RVU is less than 80%, the practice will be profitable under Medicare
- If Cost per RVU is between 80% and 100% of the Medicare CF, factor in collections for Medicare co-pay
  - Cost/RVU – (CF * .8) = difference
  - Difference / CF = variance
  - Variance * 5 = minimum collection percent
    - 1% for this practice
- A CF greater than the Medicare CF indicates non-profitability under Medicare

Cost per RVU Example

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<tr>
<td>Collection Percent</td>
<td>50.74%</td>
</tr>
<tr>
<td>Cost per Total RVU</td>
<td>$32.09</td>
</tr>
<tr>
<td>Collecton per Total RVU</td>
<td>$50.73</td>
</tr>
<tr>
<td>Cost per Total RVU as a percentage of the Medicare CF</td>
<td>84.68%</td>
</tr>
<tr>
<td>Minimum Collection of Patient Payment Responsibility (20% Copay)</td>
<td>23.38%</td>
</tr>
</tbody>
</table>

(Only applies if the Cost per RVU is between 80% of the Medicare CF and the Medicare CF)

- In this case, the cost per RVU of 32.09 is approximately 84.7% of the Medicare conversion factor and 105% of the MFS payment amount (80% of the allowable).
- To be profitable under Medicare, this practice has to collect at least 23.4% of the patient responsibility (20% of the MFS allowable).
Contract Profitability

- Many contracts are based upon a percent of Medicare
  - To use the CF, you need to know what year MFS is being used
  - Determine the ratio, i.e. 120% of Medicare
    - Also 120% of that year’s Medicare CF

- If the Cost per RVU is less than the contract ratio, the overall result should be profitability, for example
  - If the contract is 120% of the CY 2009 MFS (CF = 36.0666) then the cost per RVU should be less than 43.28
  - Make sure that you are considering hold-back and methodology for applying CF to RVU values

- This is applicable based upon the entire contract, not each line item

Cost per Occurrence

<table>
<thead>
<tr>
<th>Code</th>
<th>Fee</th>
<th>Freq</th>
<th>RVU</th>
<th>Tot Fee</th>
<th>Tot RVU</th>
<th>MFS</th>
<th>CF</th>
<th>Cost</th>
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<td>$57.15</td>
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<td>$2,503,601</td>
<td>32,445.15</td>
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</tbody>
</table>

- Multiply the Cost per RVU by the Adjusted RVU for each code to get the Cost for that code
A Word about Collection

- We use the collection amount in this module to calculate the profit/loss for each code group.
- Collection is determined by the actual dollar amount collected in relation to billing during a similar period:
  - Be careful of significant A/R recoveries
  - Only include patient generated revenues
- Percent is determined by:
  - Average collection for all procedures, or
  - Average collection by payer, or
  - Average collection by code category, or
  - Average collection by individual code.

Calculating Profit/Loss

<table>
<thead>
<tr>
<th>Code</th>
<th>Fee</th>
<th>Freq</th>
<th>Tot Fee</th>
<th>Tot RVU</th>
<th>Cost Per</th>
<th>Collect</th>
<th>P/L</th>
<th>Total P/L</th>
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<td>$47.52</td>
<td>$15,966.35</td>
</tr>
</tbody>
</table>

- Assign collection amount (percent) for each code group
- Subtract the cost amount from the average collection amount:
  - Determines if there is a profit or loss for that procedure
- Multiply the P/L per occurrence times the frequency

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P/L Statistics – Major Category

Descriptive Statistics: Profit/Loss for Procedure

<table>
<thead>
<tr>
<th>Variable</th>
<th>Major Category</th>
<th>Count</th>
<th>Mean</th>
<th>StdDev</th>
<th>Sum</th>
<th>Median</th>
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</thead>
<tbody>
<tr>
<td>Profit/Loss for Procedure</td>
<td>X</td>
<td>171</td>
<td>-6.72</td>
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<td>1189.73</td>
<td>-7.75</td>
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<tr>
<td></td>
<td>M</td>
<td>12</td>
<td>112.3</td>
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<td>1347.5</td>
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<td></td>
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<tr>
<td></td>
<td>R</td>
<td>4</td>
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<td>42.30</td>
<td>5.96</td>
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<tr>
<td></td>
<td>S</td>
<td>542</td>
<td>227.9</td>
<td>294.9</td>
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<td>170.2</td>
</tr>
</tbody>
</table>

- Take a look at profit/loss statistics by major code category
- An average or median loss should be reviewed in greater detail

Scatter plot Costs for Carve-out

Scatterplot of Collection Amount vs Procedure Cost

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Calculating Break Even Fees

<table>
<thead>
<tr>
<th>Code</th>
<th>Fee</th>
<th>Cost Per</th>
<th>Collect</th>
<th>P/L</th>
<th>Total P/L</th>
<th>Break Even</th>
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<td>$1,679.77</td>
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<td>$116.00</td>
<td>$59.77</td>
<td>$11,415.25</td>
<td>$70.29</td>
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<td>$103.81</td>
<td>$159.20</td>
<td>$55.39</td>
<td>$3,212.88</td>
<td>$129.76</td>
</tr>
<tr>
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<td>$62.24</td>
<td>$93.87</td>
<td>$31.63</td>
<td>$8,540.40</td>
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<tr>
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<td>$101</td>
<td>$123.41</td>
<td>$80.80</td>
<td>$(542.61)</td>
<td>$(8,863.20)</td>
<td>$154.26</td>
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<tr>
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<td>$92.84</td>
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<td>$2,064.71</td>
<td>$76.94</td>
</tr>
<tr>
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<td>$127.90</td>
<td>$179.20</td>
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<td>$7,387.91</td>
<td>$159.87</td>
</tr>
<tr>
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<td>$155.20</td>
<td>$47.52</td>
<td>$15,966.35</td>
<td>$134.60</td>
</tr>
</tbody>
</table>

- The break-even fee is the amount you need to charge in order to collect enough to cover the cost to deliver the service or perform that specific procedure.
- Divided the cost per occurrence by the collection percent.
- For 100% reimbursed managed care plans, cost and B/E are the same.

Cost per Practice Expense RVU

- **Use fixed and variable expenses**
  - Excludes physician-related expenses
    - Owner salaries
    - Bonuses/Distributions
    - Malpractice Expense?
  - Use practice expense RVU (+ RVUMP?)
    - Divide applicable expenses by RVUPE
    - Establishes metrics for infrastructural and operational expenses.
### Cost per Practice Expense RVU

<table>
<thead>
<tr>
<th>Code</th>
<th>Fee</th>
<th>Freq</th>
<th>Tot Fee</th>
<th>RVUpe</th>
</tr>
</thead>
<tbody>
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<td>Cost per RVU</td>
<td>32.05</td>
</tr>
</tbody>
</table>

- Cost per RVUPE = 32.05, indicating that the practice is operationally profitable under Medicare (based on co-pay collections)
- Used as benchmark to measure success (or failure) of cost containment programs and processes

### Cost per Work RVU

- **Use physician-related expenses**
  - Owner salaries
  - Benefits and perks
  - ?Malpractice Expense?
    - Exclude bonuses and distributions

- **Use Work RVU (+ RVUMP?)**
  - Divide applicable expenses by RVUWK (+ RVUMP)
  - Establishes metrics for physician cost components
    - Effective for compensation modeling
### Cost per Work RVU

<table>
<thead>
<tr>
<th>Code</th>
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<th>Freq</th>
<th>Tot Fee</th>
<th>RVUwk</th>
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</tbody>
</table>

- Cost per RVUWK = 48.45, indicating that the compensation afforded the providers is not sustainable under Medicare or MC contracts that pay under 127% of the MFS
- Used as benchmark to measure success (or failure) of compensation programs

### Continuing Education

- ACMPE credit for medical practice executives....... 1
- ACHE credit for medical practice executives........ 1
- CME *AMA PRA Category 1 Credits*™.................... 1
- CPE credit for certified public accountants (CPAs).... 1.2
- CEU credit for generic continuing education............ 1

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Frank Cohen

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