

CHAPTER 7

Pricing and Service Decisions

- **Price setters versus price takers**
- **Pricing approaches**
 - **Full cost**
 - **Marginal cost**
- **Target costing**
- **Analysis methods**
 - **Setting prices**
 - **Determining services**

Introduction

- One use of managerial accounting information within health services organizations is to:
 - **Set the prices (and discounts)** on services offered under charge-based reimbursement.
 - **Determine the financial impact** of services offered when prices are dictated.
 - **Identify the lowest feasible price** when prices are negotiated.
- Such decisions have a profound effect on a provider's financial position.

Price Setters Versus Takers

- When a provider has market dominance, and hence can set its own prices (within reason), it is said to be a **price setter**.
- In other situations, providers are **price takers**:
 - Perfectly competitive markets
 - Payer dominance
 - Government programs
- However, in many situations providers are *neither* pure price takers nor price setters and room for negotiation exists.

Pricing Strategies

- When a provider is a *price setter* (or when negotiation is possible), there are several *theoretical bases* upon which prices can be set.
- The two most common are:
 - Full cost pricing
 - Marginal cost pricing

Full Cost Pricing

- Under **full cost pricing**, prices for a service are set to cover ***all costs***:
 - Direct variable costs
 - Direct fixed costs
 - Overhead (indirect) costs
- In addition, a ***profit component*** typically is added.
- ? How easy is it to measure full costs?

Marginal Cost Pricing

- Under **marginal cost pricing**, prices for a service are set to cover *incremental*, or *marginal, costs*. Generally, this means recovering only *direct variable costs*.
- ? Can a provider survive if all services are priced at marginal cost?
- ? What is **cross-subsidization**, or **price shifting**?
- ? Should marginal cost pricing ever be used?

Target Costing

- **Target costing** is a management strategy used by *price takers*.
- Under target costing:
 - Revenues are projected assuming prices as given in the marketplace.
 - Required profits are subtracted from revenues.
 - The remainder is the *target cost level*.
- ? What is the primary benefit of target costing?

Setting Prices on Individual Services

- Assume Windsor Clinic plans to offer a new outpatient service.
- Projected data:
 - Variable cost per visit \$10
 - Annual direct fixed costs \$100,000
 - Annual overhead allocation \$25,000
 - Number of visits 5,000
- What price must be set to achieve **accounting breakeven** (zero profit)? To achieve **economic breakeven** (earn a fair profit)?

Price Required for Accounting BE

$$\text{Total revenues} - \text{Total costs} = \$0$$

$$\begin{aligned} \text{Total revenues} - \text{Total VC} \\ - \text{Direct fixed costs} \\ - \text{Overhead} &= \$0 \end{aligned}$$

$$\begin{aligned} (5,000 \times P) - (5,000 \times \$10) \\ - \$100,000 - \$25,000 &= \$0 \end{aligned}$$

$$(5,000 \times P) - \$175,000 = \$0$$

$$5,000 \times P = \$175,000$$

$$P = \$175,000 / 5,000 = \$35.$$

Price Required for \$100,000 Profit

$$\begin{aligned} \text{Total revenues} &- \text{Total VC} \\ &- \text{Direct fixed costs} \\ &- \text{Overhead} \end{aligned} = \$100,000$$

$$\begin{aligned} (5,000 \times P) &- (5,000 \times \$10) \\ &- \$100,000 - \$25,000 \end{aligned} = \$100,000$$

$$(5,000 \times P) - \$175,000 = \$100,000$$

$$5,000 \times P = \$275,000$$

$$P = \$275,000 / 5,000 = \$55.$$

Discussion Items

- **What price would be set under marginal cost pricing?**
- **What are the primary problems inherent in price setting analyses of this type?**

Setting Prices Under Capitation

- **Montana Medical Center (MMC) has 1,400 admissions from one charge-based (FFS) payer with 15,000 members.**
- **Relevant financial data:**
 - **Average rev/per admission = \$ 10,000.**
 - **Average VC/per admission = \$ 3,000.**
 - **Direct FC and overhead = \$9,000,000.**
- **The payer wants to move to capitation. What rate must be set on these patients to achieve the current profit?**

Current P&L Statement

Total revenues (\$10,000 x 1,400)	\$14,000,000
Total VC (\$3,000 x 1,400)	4,200,000
	<hr/>
Total CM (\$7,000 x 1,400)	\$ 9,800,000
Direct FC and overhead	9,000,000
	<hr/>
Profit	\$ <u>800,000</u>

Setting Prices Under Capitation (Cont.)

- All else the same, MMC needs to obtain the same total revenues, **\$14,000,000**.
- This amount of annual revenues must be obtained from **15,000** enrollees:
$$\$14,000,000 / 15,000 = \$933.33 \text{ per member.}$$
- But capitation rates are quoted on a per member per month (PMPM) basis:
$$\$933.33 / 12 = \$77.78 \text{ PMPM.}$$

Projected P&L Statement

Total rev. ($\$77.78 \times 15,000 \times 12$)	\$14,000,000
Total VC ($\$3,000 \times 1,400$)	<u>4,200,000</u>
Total CM	\$ 9,800,000
Direct FC and overhead	<u>9,000,000</u>
Profit	<u><u>\$ 800,000</u></u>

? What is the meaning of the contribution margin under capitation?

Scenario Analysis

- Note that the admission rate was assumed to remain unchanged at:
 $1,400 / 15,000 = 0.0933$ per member.
- Before making a decision, MMC should analyze alternative scenarios, a technique called **scenario analysis**.
- What profit would result if a *utilization management program* reduced the admission rate to **0.08** admissions per enrollee?

Scenario Analysis (Cont.)

- If utilization were reduced, the number of admissions would fall from **1,400** to:

$$15,000 \times 0.08 = \mathbf{1,200.}$$

- Therefore, variable costs would fall by:

$$200 \times \$3,000 = \mathbf{\$600,000.}$$

- At **\$77.78** PMPM, profit would increase to:

$$\mathbf{\$800,000 + \$600,000 = \$1,400,000.}$$

Projected P&L Statement

Total revenues ($\$77.78 \times 15,000 \times 12$) $\$14,000,000$

Total VC ($\$3,000 \times 1,200$) 3,600,000

Total CM $\$10,400,000$

Direct FC and overhead 9,000,000

Profit $\$ 1,400,000$

- ? Should the direct fixed costs and overhead be adjusted for the utilization change?
- ? Assume the utilization management program costs $\$100,000$. Should it be undertaken?

Scenario Analysis (Cont.)

Assume now that MMC wants to share some of the utilization management program gains with the payer. What PMPM maintains the contract profit at **\$800,000?**

Now, revenue could fall by \$600,000 to \$13,400,000:

$$\text{\$13,400,000} / 15,000 = \text{\$893.33 per member.}$$

On a PMPM basis:

$$\text{\$893.33} / 12 = \text{\$74.44 PMPM.}$$

Projected P&L Statement

Total revenues ($\$74.44 \times 15,000 \times 12$)	\$13,400,000
Total VC ($\$3,000 \times 1,200$)	3,600,000 _____
Total CM	\$ 9,800,000
Direct FC and overhead	9,000,000 _____
Profit	\$ <u><u>800,000</u></u>

Scenario Analysis (Cont.)

- **Now assume that utilization management would hold the number of admissions to 1,200.**
- **What capitation rate would be needed to achieve accounting breakeven (zero profit)?**

Scenario Analysis (Cont.)

- To break even, revenues must equal total costs:

$$\begin{aligned}\text{Total costs} &= \text{Total VC} + \text{Total FC} \\ &= \$3,600,000 + \$9,000,000 \\ &= \mathbf{\$12,600,000.}\end{aligned}$$

- Thus, the PMPM rate is:

$$\begin{aligned}\text{PMPM} &= \$12,600,000 / 15,000 / 12 \\ &= \mathbf{\$70.00.}\end{aligned}$$

Scenario Analysis (Cont.)

- Finally, assume that the payer insists on a PMPM rate of **\$65**.
- What variable cost per admission would be required for MMC to achieve accounting breakeven (zero profit)?

Scenario Analysis (Cont.)

- At a PMPM of **\$65**, total revenues are:

$$\begin{aligned}\text{Revenues} &= \$65 \times 12 \times 15,000 \\ &= \mathbf{\$11,700,000}.\end{aligned}$$

- With total fixed costs of **\$9,000,000**, total variable costs must be held to:

$$\begin{aligned}\text{Total VC} &= \$11,700,000 - \$9,000,000 \\ &= \mathbf{\$2,700,000}.\end{aligned}$$

- Thus, the variable cost rate is:

$$\text{VC Rate} = \$2,700,000 / 1,200 = \mathbf{\$2,250}.$$

The Value of Scenario Analysis

- **In this illustration, scenario analysis focused on:**
 - **The value of utilization management.**
 - **The minimum PMPM rate necessary to break even.**
 - **The ability to accept a lower PMPM rate when cost control is possible.**
- **It is obvious that scenario analysis gives decision makers more insights into the decision at hand.**

Setting Managed Care Plan Rates

- Managed care plans must set the rates they charge to employers on the basis of their costs of providing healthcare services.
- In general, the rates for different services are estimated and then aggregated.
- This is usually done on a PMPM basis *regardless* of the actual reimbursement methods used to pay providers.

Setting Managed Care Plan Rates (Cont.)

- There are three techniques used to set the rates for individual providers:
 - Fee-for-service approach
 - Cost approach
 - Demographic approach
- In addition to covering services provided, managed care plans must incorporate ***administrative costs*** and ***profits (reserves)*** into the PMPM rate.

FFS Approach

- To illustrate the FFS method, assume that BetterCare HMO targets **350** inpatient days for each **1,000** members of an employee group.
- Furthermore, previous experience in the service area indicates that a fair hospital FFS (per diem) rate is **\$1,000** per day.
- ? What drives the utilization assumption?

FFS Approach (Cont.)

$$\begin{aligned}\text{Inpatient cost} &= \frac{\text{PM utilization rate} \times \text{FFS rate}}{12} \\ &= \frac{0.350 \times \$1,000}{12} \\ &= \mathbf{\$29.17 \text{ PMPM.}}\end{aligned}$$

Cost Approach

- Assume each enrollee will make **3** visits per year to a primary care physician (PCP).
- Each PCP can handle **4,000** patient visits per year.
- PCPs are compensated at an annual rate of **\$175,000**.

Cost Approach (Cont.)

- Each member will require $3 / 4,000 = 0.00075$ PCPs.
- The annual per member PCP cost is $0.00075 \times \$175,000 = \131.25 .
- Thus, the PMPM for PCP professional fees is $\$131.25 / 12 = \10.94 .
- Note that in practice it is common to conduct the pricing analysis on the basis of **1,000** members.

Total Physician Costs

- **Total physician costs (shown on the next slide) include:**
 - **Physician compensation**
 - **Support staff compensation**
 - **Supplies**
 - **Overhead**
- **In addition, an amount for practice profit is included.**
- **Finally, an amount is added for referrals outside the HMO panel.**

Total Physician Costs (Cont.)

Primary care	\$10.94	PMPM
Specialist care	14.20	
Support staff	6.67	
Supplies	3.50	
Overhead	6.00	
Subtotal	<u>\$41.31</u>	PMPM
Profit (10%)	<u>4.13</u>	
In-area total	\$45.44	PMPM
Outside referrals	<u>3.40</u>	
Total	<u><u>\$48.84</u></u>	PMPM

Demographic Approach (PMPM)

<u>Age Band</u>	<u>Demographics</u>		<u>Primary Care</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
0-1	1.9%	1.9%	\$47.00	\$47.00
2-4	2.8	2.8	20.25	20.25
5-19	12.4	12.4	11.04	11.04
20-29	11.4	15.4	10.53	15.92
30-39	9.6	10.0	13.04	17.56
40-49	5.3	5.7	16.40	19.56
50-59	3.6	3.6	20.74	22.74
60+	0.7	0.5	24.93	25.60
Male/female cost			<u>\$ 7.07</u>	<u>\$ 9.10</u>
Total service cost				<u><u>\$16.17</u></u>

Total Premium Calculation

Clinical Costs:

Hospital inpatient	\$ 27.35	PMPM
Other institutional	9.12	
Pharmacy and DME benefits	7.00	
Physician care	<u>48.84</u>	
Total medical care costs	<u>\$ 92.31</u>	PMPM

HMO Costs:

Administration	\$ 13.85	PMPM
Profit/Reserves	<u>2.05</u>	
Total HMO costs	<u>\$ 15.90</u>	PMPM

Total premium	<u><u>\$108.21</u></u>	PMPM
---------------	------------------------	------

Using RVUs to Set Prices

- **Relative value units (RVUs)** measure the *relative* amount of resources consumed to provide a *particular service*.
- They form the basis for Medicare's *RBRVS (Resource Based Relative Value System)* for physician reimbursement.
- We will use a laboratory setting to illustrate the use of RVUs to set prices.

Using RVUs to Set Prices (Cont.)

- To begin, the value of one RVU must be defined. For example, it might include:
 - 10 minutes of technician time
 - \$1 of supplies
 - \$20 of equipment usage
 - And so on
- Then, the number of RVUs for each activity (test) are established.
- Finally, total annual costs and RVUs are estimated.

Laboratory Annual Estimates

<u>Test</u>	<u>Number of RVUs</u>	<u>Number of Tests</u>	<u>Total RVUs</u>
Urinalysis	5	5,000	25,000
Blood typing	10	4,000	40,000
Blood cell count	50	1,000	50,000
Tissue analysis	200	250	<u>50,000</u>
			<u><u>165,000</u></u>

Total annual costs = \$250,000.

Finding the Cost and Price per RVU

$$\begin{aligned}\text{Cost per RVU} &= \frac{\text{Total annual costs}}{\text{Total number of RVUs}} \\ &= \frac{\$250,000}{165,000} \\ &= \mathbf{\$1.52} \text{ per RVU.}\end{aligned}$$

To add a 25% markup,

$$\text{Price} = \$1.52 \times 1.25 = \mathbf{\$1.90} \text{ per RVU.}$$

Setting Test Prices

<u>Test</u>	<u>Number of RVUs</u>	<u>Price per RVU</u>	<u>Test Price</u>
Urinalysis	5	\$1.90	\$ 9.50
Blood typing	10	1.90	19.00
Blood cell count	50	1.90	95.00
Tissue analysis	200	1.90	380.00

Service Decisions

- **Service decisions** are analyzed in a similar manner. The difference is that the revenue rate is given, and the provider must determine whether or not its cost structure will permit a profit to be earned.
- ? Why is scenario analysis so important in pricing and service decision analyses?

Conclusion

- This concludes our discussion of *Chapter 7* (Pricing and Service Decisions).
- Although not all concepts were discussed in class, you are responsible for all of the material in the text.
- ? Do you have any questions?