King Saud University College of Business Administration Department of Health Administration - Masters` Program

HHA 513 Financing Health Systems Second Semester 1442/1443

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Learning Objectives

- *Explain the difference between price setters and price takers.*
- Differentiate full-cost pricing from marginal cost pricing.
- **Describe** how target costing is used.
- **Conduct profit analyses** to learn the impact of volume changes on profitability and to determine breakeven points.
- **Discuss the primary differences in profit analyses** between fee-for-service and capitation reimbursement.

Introduction

- One of the most important uses of managerial accounting data is to establish a price for a particular service or, given a price, to determine whether the service will be profitable.
- For example, in a charge-based environment, healthcare managers must set prices on the services their organizations offer.
- Managers also must determine whether to offer volume discounts to valued payer groups, such as managed care plans or business coalitions, and how large these discounts should be.

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Introduction

- After prices are set, managers can estimate revenues on the basis of volume estimates.
- Furthermore, the business's revenue structure (volumes coupled with reimbursement rates) can be combined with its cost structure to forecast profits under a wide range of operating assumptions.
- Having some knowledge of future profitability requirements, and the prices (and hence revenues) for attaining profitability, is critical for good financial decision making.

Healthcare Providers and the Power to Set Prices

- A healthcare provider's power to set prices falls somewhere along a spectrum between two extremes.
- At one extreme, providers have no power whatsoever and must accept the prices (reimbursement amounts) set by the marketplace.
- At the other extreme, providers can set any prices desired, and payers must accept those prices.
- Clearly, few real-world markets for healthcare services support such extreme positions.
- *Nevertheless, thinking in such terms can help healthcare managers understand the pricing decisions they face.*

- If a healthcare organization is one of many providers in a service area that has numerous purchasers (typically third-party payers), and if little distinguishes the services offered by the various providers, then economic theory suggests that the prices are set by local supply-and-demand conditions.
- Furthermore, the actions of a single participant whether a provider or payer—cannot influence the prices set in the marketplace.

- In such a perfectly competitive market, a healthcare provider is said to be a price taker because it is constrained by (or must accept) the prices set in the marketplace.
- Few markets for healthcare services are perfectly competitive.
- But some payers—notably government payers and managed care plans with market power—can set reimbursement levels on a take-it-or-leave-it basis.

- In this situation, as in competitive markets, providers are price takers in the sense that they have very little influence over reimbursement rates.
- Because many markets either are somewhat competitive or are dominated by large payer groups, and because government payers cover a significant proportion of the population, most providers probably qualify as price takers for a large percentage of their revenue.

Providers as Price Takers

- In general, providers that are price takers must take price as a given and concentrate managerial efforts on cost structure and utilization to ensure that their services are profitable.
- Thus, price takers are just as concerned about costs as are price setters.
- From a purely financial perspective, a price-taking provider should offer all profitable services, even when the price is reduced by discounting or other market actions.

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- Although this approach to service decisions is obviously simplistic, it does raise an important issue:
- What costs are relevant to the decision at hand?
- **To ensure long-term sustainability**, prices must cover full costs, including direct and indirect (overhead) costs.
- However, prices that do not cover full costs may be acceptable for short periods, and it might be in the provider's best interests to accept such prices.

Providers as Price Setter

- A provider that has the power (within reason) to set market prices for its services.
- Healthcare providers with market dominance enjoy large market shares and hence exercise some pricing power.
- Within limits, such providers can decide what prices to set on the services offered.

Providers as Price Setter

• Furthermore, if a provider's services can be differentiated from others on the basis of quality, convenience, or another characteristic, the provider also has the ability, again within limits, to set prices on the differentiated services.

Providers as Price Setter

- A healthcare provider that has such pricing power is called a price setter.
- Accounting for market conditions when making forecasts or decisions about service offerings would be much easier for healthcare managers if a provider's status as a price taker or a price setter were fixed for all payers, for all services, for long periods.
- But the healthcare market is ever changing, and providers can quickly move from one status to the other.

Providers as Price Setter

- For example, the merger of two healthcare providers may create sufficient market power to change two price takers (as separate entities) into one price setter (as a combined entity).
- Furthermore, providers can be price takers for some services (or some third-party payers or some geographic markets) and price setters for others.

Price-Setting Strategies

- When providers are price setters, alternative strategies can be used to price healthcare services.
- No single strategy is most appropriate in all situations.
- In this section, we discuss the two price-setting strategies most frequently used by healthcare organizations.

Full Cost Pricing

- In full-cost pricing, prices are set to cover all costs associated with providing a particular service. Thus, the price must cover both direct and indirect (overhead) costs.
- In addition, to truly cover all costs of doing business, including economic costs, the price must include a profit component.
- All providers, even not-for-profit ones, must earn a profit to ensure the ability to replace assets as needed, invest in new technologies, and expand facilities to meet growing community needs.

Full Cost Pricing

- Full-cost pricing recognizes that to remain viable in the long run, healthcare organizations must set prices that recover all costs associated with operating the business. Thus, the full cost of a service—whether a patient day in a hospital, a visit to a clinic, a laboratory test, or the treatment of a particular diagnosis—must include the following:
 - a. the direct variable costs of providing the service,
 - b. the direct fixed costs, and
 - *c. the appropriate share of the indirect (overhead) expenses of the organization.*

Full Cost Pricing

Because allocating overhead costs is complicated, the full costs of an individual service are sometimes difficult to determine with precision and hence may have to be viewed as merely an estimate of the true costs. Nevertheless, in the aggregate, revenues must cover both direct and indirect (overhead) costs, and hence prices in total must cover all costs of an organization.

Full Cost Pricing

- **Furthermore**, all businesses need profits to survive in the long run.
- In not-for-profit businesses, prices must be set high enough to provide the profits needed to support asset replacement and to acquire new assets as needed to support volume growth and provide new technologies.

- The cost of one additional unit of output; in an outpatient setting, the cost (typically only for supplies) of one more patient visit on top of the existing volume.
- In economics, the marginal cost of an item is the cost of providing one additional unit of output, whether that output is a product or a service, beyond the current volume.

Exhibit 4.4, the marginal cost initially decreases, but then it increases when output reaches 120 units. Short-run Cost of Production

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Out Put	Total Fixed	Total	Total Cost	Average Total	Marginal
Unit	Cost (TFC)	Variable Cost (TVC)	(TC) TFC+TVC	Cost (ATC) TC / Q	Cost ΔTC/ΔQ
0	\$ <0.000		\$ 60,000	(AIC)IC/Q	
0	\$ 60,000	0	\$ 00,000		
20	\$ 60,000	\$ 400	\$ 60,400	\$ 3,020.00	\$ 20
40	\$ 60,000	\$ 600	\$ 60,600	\$ 1,515.00	\$ 10
60	\$ 60,000	\$ 740	\$ 60,740	\$ 1,012.30	\$7
80	\$ 60,000	\$ 840	\$ 60,840	\$ 760.50	\$5
100	\$ 60,000	\$ 900	\$ 60,900	\$ 609.00	\$3
120	\$ 60,000	\$ 1040	\$ 61,040	\$ 508.70	\$7
140	\$ 60,000	\$ 1,380	\$ 61,380	\$ 438.40	\$ 17
160	\$ 60,000	\$ 1,880	\$ 61,880	\$ 386.80	\$ 25
180	\$ 60,000	\$ 2,600	\$ 62,600	\$ 347.80	\$ 36
200	\$ 60,000	\$ 3,600	\$ 63,600	\$ 318.00	\$ 50

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- For example, suppose that a 150-bed hospital currently provides 40,000 patient days of care.
- Its marginal cost, based on an inpatient day as the unit of service, is the cost of providing the 40,001st day of care.
- When only one additional day is added to a current volume of 40,000 patient days, fixed costs likely will not increase, so the marginal cost consists solely of the variable costs associated with an additional one-day stay.

- In most situations, no additional labor costs would be involved.
- The marginal cost, therefore, consists of expenses such as laundry, food and expendable supplies, and any additional utility services consumed during that day.
- Obviously, the marginal cost associated with one additional patient day is far less than the full cost of that patient day, which must include all direct fixed and indirect (overhead) costs plus a profit component.

- Should any prices be set on the basis of marginal costs?
- In theory, the answer is no.
- If all payers for a particular provider set reimbursement rates on the basis of marginal costs, the organization would not recover its full costs, including direct and indirect costs, and hence would ultimately fail.
- For prices to be equitable, all payers should pay their fair shares in covering providers' total costs.

- Furthermore, if marginal cost pricing should be adopted, which payer(s) should receive its benefits by being charged lower prices?
- Should it be the government because it is taxpayer funded, or should it be the last payer to contract with the provider?
- These questions do not have good answers.

- In marginal cost pricing, prices are set to cover only the marginal cost of providing the service.
- In general, this means setting a price equal to variable costs.
- Marginal cost pricing is usually a temporary strategy because it does not cover the full cost of providing services.
- Thus, it can be sustained over the long run only if the provider recoups the losses by charging more than full costs on other services.

- The easy solution, at least conceptually, is to require all payers to pay full costs and hence equitably share the burden of the organization's total costs.
- However, as a practical matter, requiring all payers to pay the full cost of services may not be feasible.
- **Public payments, for example,** may not always cover the full costs of services.

- In other cases, it may make sense for healthcare providers to occasionally use marginal cost pricing to attract a new patient group or to retain an existing group (gain or retain market share).
- To survive in the long run, though, businesses must earn revenues that cover their full costs.

- Thus, marginal cost pricing must be a temporary measure, or the organization must adopt other strategies to ensure that full costs are covered.
- Two strategies that have been debated over the years are cost shifting and cross-subsidization.

Cost Shifting

• The act of charging more than full costs to one set of patients to compensate for charging less to another set.

Cross-Subsidization

• The act of using margins from profitable services to support the delivery of unprofitable services.

Cost Shifting

In cost shifting, providers make up losses from public payers by charging private payers more.
This is only feasible in markets where providers have market power, and evidence suggests it is not pervasive.

Cross-Subsidization

- In cross-subsidization, margins from profitable services, such as cardiology, are used to support historically unprofitable services, such as psychiatric, substance abuse, and trauma care services.
- Although cross-subsidization is difficult to observe in publicly available data, evidence suggests that it is used as a strategy to sustain socially desirable services that do not, on their own, often generate sufficient revenue to cover full costs

- Target costing is a management strategy that helps providers offset the limitations imposed when they are price takers.
- Target costing assumes that the amount received for a service is fixed and subtracts the desired profit on that service to obtain the target cost level.
- If possible, management uses this strategy to reduce the full cost of the service to the target level, with a goal of continuous cost reduction, which eventually pushes costs below the target.

- Essentially, target costing backs into the cost at which a healthcare service must be provided in the long run to attain a given profitability target.
- Perhaps the greatest value of target costing lies in the fact that it forces managers to take seriously the prices set by external forces; that is, it recognizes that the purchasers of healthcare services are not concerned about the underlying costs of the services provided.

- Thus, to ensure financial survival, providers must attain cost structures compatible with the revenue stream.
- Providers that cannot lower costs to the level required to make a profit ultimately fail.
- Target costing is a strategy used by price takers.

- In essence, the price (reimbursement rate) is assumed to be fixed, and the goal is to create a cost structure for that service that allows the provider to make a profit.
- Target costing forces managers to focus on costs, rather than prices, as the key to profitability.
- To achieve a profit using this strategy, managers examine factors that are within their control (costs) as opposed to factors that are, for the most part, uncontrollable (prices).

Profit Analysis

- is a technique used to analyze the effects of volume changes on profit. (Accountants often refer to this technique as cost-volume-profit [CVP] analysis.)
- In addition, profit analysis can be used to examine the effects of alternative assumptions regarding costs and prices.
- Such information is useful as managers evaluate future courses of action regarding pricing and the introduction of new services.

Profit Analysis

- Profit analysis combines data on costs, volume, and prices to estimate the profitability of organizations, departments, or services.
- **Profit analysis is an important component in planning** for the future because it allows managers to see how profitability is affected by changes in cost, volume, and price assumptions.

Profit Analysis

- In essence, profit analysis is used to conduct "what if" analyses.
- What if volume is lower than expected?
- What if prices are higher than anticipated?
- What if costs are higher than forecasted?
- The answers to these and similar questions provide managers with insights into the organization's financial future.

Profit and Loss (P&L) Statement

- A P&L (pronounced "P and L") statement is a listing of revenues, expenses, and profit (revenues minus expenses).
- **P&L statements** can be provided in numerous formats, depending on the specific purpose of the statement.

Profit and Loss (P&L) Statement

- For example, for use in profit analysis, costs must be broken out as fixed and variable.
- P&L statements can be constructed for the entire organization, a department, or a service.
- Also, they can contain historical data, which report what has happened in the past, or forecasted data, which express expectations about the future.

Profit and Loss (P&L) Statement

- The projected P&L statement used in profit analysis contains four variables; three of the variables are assumed and the fourth is calculated.
- The assumed variables are expected volume (75,000 visits), expected price (\$100 per visit), and expected costs (as defined by the clinic's cost structure).
- **Profit, the fourth variable**, is calculated on the basis of the three assumed variables.

- Contribution margin is the amount of per unit revenue that is available to first cover fixed costs and then contribute to profitability.
- It is calculated as the revenue per unit of service minus the variable cost per unit of service (variable cost rate).
- The idea is that if we strip the variable costs out of revenue, we will be left with the amount available per unit of output to cover fixed costs.

- Once fixed costs are covered, any additional contribution margin amounts flow directly to profit.
- *To illustrate*, *suppose you have a custom pen business*.
- The pens cost you \$1.75 each (variable costs), but you had to pay \$50 to design the logo (fixed costs).
- The contribution margin on each pen is **Per unit** revenue minus Variable cost rate.

- If you sell the pens for \$3 each, the contribution margin is \$3.00 \$1.75 = \$1.25.
- Thus, each pen sold will contribute \$1.25 to cover the \$50 fixed costs.
- Once you sell 40 pens, you will have recouped the \$50 fixed costs (40 × \$1.25 = \$50), so all sales after the first 40 create profits for your custom pen enterprise at a rate of \$1.25 per pen sold.

- Total contribution margin is the sum of the contribution margins of all units sold.
- Assume that you sell 50 pens. With a contribution margin of \$1.25 per pen, the total contribution margin is 50 × \$1.25 = \$62.50.
- The first \$50 of the total contribution margin is needed to cover your fixed costs of \$50, so the remaining \$12.50 flows to profit.
- Thus, at a volume of 60 pens, your profit is \$12.50.

Marginal Analysis

- Marginal analysis is used to analyze the impact of adding volume to an existing base.
- For example, assume you have sold 40 of your pens at \$3.00 each, but now a classmate offers to buy 20 more at \$2.00 apiece.
- The total cost of 60 pens, based on a \$1.75 cost of each pen and a \$50 up-front charge, is (60 × \$1.75) + \$50 = \$155.

Marginal Analysis

- Thus, the average cost per pen is \$155 ÷ 60 = \$2.58, so you might be inclined to say no to the offer, which is only \$2.00 per pen.
- On the other hand, the \$50 charge has already been covered by past sales, so the marginal cost to you of each additional pen is only the variable cost rate of \$1.75.

Marginal Analysis

- Thus, the contribution margin on each of the additional 20 pens is \$2.00 \$1.75 = \$0.25, so each pen sold would contribute that amount to your bottom line.
- Unless other issues are at play and need to be considered, you should take your classmate's offer.

Breakeven Analysis

Breakeven analysis is a method used to determine the value of a given input variable (e.g., volume, costs, price) that is required to achieve some minimum desired profit, holding other variables constant.
For example, a clinical laboratory might determine that, at a given volume of tests, it must charge \$23 per test to break even on total costs (i.e., produce a profit of zero).

- This means that at a price of \$23 per test, the reimbursement rate just equals the full cost of providing that test.
- Alternatively, the laboratory might determine that, given a reimbursement rate of \$20 per test, it would need to perform at least 1,050 tests in order to break even on total costs.
- At that volume, given a price of \$20, the laboratory's total revenues from the test equal the total costs of the test.

- Breakeven analysis has many applications in healthcare finance.
- In the context of profit analysis, breakeven analysis involves finding the value of an input variable that produces some desired profit, holding other variables constant.

- Breakeven can be defined in two ways: on the basis of accounting costs alone (where the target profit is zero) or on the basis of accounting costs plus a nonzero profit target.
- For example, given current reimbursement rates and the organization's cost structure, a nursing home might break even in an accounting sense when it has 45 residents, but it may require 53 residents to reach a profit target of \$50,000.

- **Breakeven analysis** can also be applied to variables other than volume.
- For example, a home health agency might break even if it's per visit costs are \$70 or less, given reimbursement rates and expected volume.
- Or a radiology group might break even if its reimbursement averages \$25 per reading, given expected volume and current costs.

- We use breakeven analysis to estimate the volume at which a business, department, or service becomes financially self-sufficient.
- When considering breakeven volume, you should be familiar with both definitions
- Accounting Breakeven, The volume that produces revenues equal to total accounting costs, resulting in zero profit.
- **Economic Breakeven**, The volume that creates revenues equal to total accounting costs plus a profit target amount.

The Impact of Cost Structure on Financial Risk

- The financial risk of a healthcare provider, at least in theory, is minimized by having a cost structure that "matches" its revenue structure.
- To illustrate, consider a clinic with all payers using fee-for-service reimbursement, which means revenues are directly related to volume.

The Impact of Cost Structure on Financial Risk

- If the clinic's cost structure consisted of all variable costs (no fixed costs), then each visit would incur costs but also create revenues.
- Assuming that the per visit revenue amount exceeds the variable cost rate (the per visit cost), the clinic would lock in a profit on each visit.
- The total profitability of the clinic would be uncertain, as it is tied to volume, but the ability of the clinic to generate a profit would be guaranteed.

Matching Cost and Revenue Structures

- Healthcare providers can lower their financial risk by matching the cost structure to the revenue structure.
- For example, providers that are primarily reimbursed on a fee-for-service basis can lower risk by converting as many fixed costs as possible to variable costs.
- Conversely, providers that are primarily reimbursed on a capitated basis can lower risk by converting variable costs to fixed costs.
- Assume that you are the business manager of a large cardiology group practice.

Matching Cost and Revenue Structures

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Key Concepts

This chapter explains how managers rely on managerial accounting information to help make pricing decisions and to conduct profit analyses. Here are the key concepts:

- **Price takers have to accept**, more or less, the prices set in the marketplace for their services, including the prices set by government payers.
- **Price setters provide services** that can be differentiated from others, by market share, quality, or other differences, such that they have the ability to set the prices on some or all of their services.

Key Concepts

- **Full-cost pricing** permits businesses to recover all costs, including both fixed and variable and direct and indirect, while marginal cost pricing typically recovers only variable costs. • **Target costing** is a concept that takes the prices paid for healthcare services as a given and then determines the cost structure necessary for
 - financial success given the prices set.

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- **Profit analysis**, sometimes called cost-volume-profit (CVP) analysis, is an analytical technique to determine the effects of volume changes on revenues, costs, and profit.
- A projected profit and loss (P&L) statement is a profit forecast that uses estimated values for volume, price, and costs.
- Breakeven analysis is used to estimate the volume needed (or the value of some other variable) for the organization to achieve a profit goal.

- Accounting breakeven occurs when revenues equal accounting costs (profit equals zero), while economic breakeven occurs when revenues equal accounting costs plus some profit target.
- Contribution margin is the difference between per unit price and the variable cost rate, or per unit revenue minus per unit variable cost.
- Thus, contribution margin is the per unit dollar amount available to first cover an organization's fixed costs and then to contribute to profits.

- In marginal analysis, the focus is on the incremental (marginal) profitability associated with increasing (or decreasing) volume.
- A capitated environment dramatically changes the situation for providers as compared with a fee-for-service environment. In essence, a capitated provider takes on the insurance function and hence bears utilization risk.

- The keys to provider success in a capitated environment are to
 - **1.** manage (reduce) utilization and
- *increase the number of members covered. To minimize financial risk, a provider should strive to attain a cost structure that matches its revenue structure.*

THANK YOU