Incentive Payments to Physicians to Reduce Services

Payments to physicians that provide incentives for fewer services may not be legal if they provide incentives to provide fewer services than are medically necessary. Nearly all HMO arrangements currently have financial rewards for reduced services and the pivotal point may be the term *medically necessary*.

Intentional Torts

If physicians or other healthcare providers commit an act of malpractice because they wish to make more money, this may be construed as an intentional tort and their malpractice insurance may not be obligated to pay if wrongdoing was found to have occured. Physicians may be potentially liable under existing payment arrangements if their malpractice insurer could argue medical services were denied to make more money. For example, a doctor who failed to authorize a mammogram for a woman with a history of family breast cancer may be liable for an intentional tort if the physician were capitated and routinely scheduled mammograms for non-HMO patients with similar histories.

There are many other legal and regulatory issues that may affect business practices in managed-care relationships. Outside legal advice should be sought to investigate possible problems and solutions for those areas cited previously, as well as others.

SUMMARY

This chapter has dealt with the topic of managed care and the evolving issues that affect financial management in managed-care situations. Managed care is not a new development in many respects. Health plans always have been in the business of accepting prepaid dollars in return for the promise to pay for any contractual medical benefits provided to the plan member. The new twist in managed care is really on the payment side. Health plans have historically paid providers, doctors, and hospitals on a fee-for-service basis. The health plan then assumed all the risk for utilization variances, whereas the provider assumed the risk of production, being able to provide services at costs less than negotiated prices. HMOs and other MCOs are trying to also shift utilization risk to providers by capitating payment.

Capitation payment systems require providers to know much more about the populations to which they are obligated to provide healthcare services and to do a much better job of forecasting. Pricing under a capitation payment system is easy to conceptualize but difficult to implement because most providers have little experience with utilization variation in a covered population. Historical use rates may be available, but managed care has created sizable shifts in utilization rates, and forecasting the magnitude of those changes is difficult.

IDSs have formed to try to place providers closer to the premium dollar flowing from the employer. At present, many of these IDS organizations are hospital-dominated, but physicians are increasingly asking why they should not take charge in the managed-care world because they have the most experience and the greatest ability to actually manage care and achieve cost savings. It is not clear whether the capital and organizational ability of the hospital or the patient-management ability of the physician will win or whether true partnerships will evolve.

ASSIGNMENTS

1. High-deductible health plans with a savings option (HDHP/SO) have begun to gain market share in the last few years. What are the critical differences between these plans and more traditional health plans?
2. You have been hired as a consultant to a major health insurance company to help identify ways to reduce payments for healthcare benefits. Please identify some possible methods that may be useful in cutting costs.
3. You represent a medical group that is considering joining a Physician Hospital Organization (PHO) whose sole objective is to negotiate with health plans and employers for the provision of hospital and physician services on a capitated basis. If your state regards this PHO as a health insurance company and requires licensure, what possible effects might this have?
4. Your multispecialty group has been approached by an HMO that wishes you to contract with them for the provision of all physician services for a fixed capitated rate on a PMPM basis. How would you decide what to do in this situation?
5. You represent an integrated delivery system that is in negotiations with a health plan for a capitated rate to cover all hospital and physician services for a defined population. The following utilization data have been given to you, which detail last year's usage rates. You have included in this table your expected costs for selected services. Using

TABLE 7-8 Hospital and Physician Services Rates and Usage Rates

Category	Annual Frequency per 1,000	Unit Cost	PMPM	Copay Frequency per 1,000	Copay Amount	Copay PMPM	Net PMPM
Hospital Inpatient							
Medical-surgical	400	$1,000		0	$0		
Maternity	15	1,000		0	0		
Mental health	50	400		0	0		
Subtotal							
Hospital Outpatient							
Surgery	100	$1,500		0	$0		
X-ray and lab	500	300		0	0		
Emergency department	150	300		150	50		
Subtotal							
Physician							
Inpatient surgery	100	$2,000		0	$0		
Outpatient surgery	500	300		0	0		
Office visits	5,000	100		5,000	10		
Inpatient visits	250	150		0	0		
Mental health	400	150		400	20		
Subtotal							
Total							

the data presented in **TABLE 7-8**, calculate a required break-even rate for this contract, assuming that you need a 15% retention factor to cover administrative costs.

6. Memorial Hospital is trying to calculate its expected payments from a proposed fee structure with a local health plan. The health plan projects its hospital budget at 465 patient days per 1,000 members, with a payment rate of $1,000 per patient day. The covered population is 25,000 members, which produces a hospital budget of $11,625,000 [(465/1,000) × 25,000 × $1,000)]. The health plan proposes that a 10% withhold be put into effect, which translates to an actual per diem payment of $900. The risk pool would be shared equally by the doctors (one half) and the hospital (one half). Any negative balance in the risk pool would be assumed by the health plan. Calculate the amount of payment to Memorial Hospital under two assumptions: 550 patient days per 1,000 and 430 patient days per 1,000.

SOLUTIONS

1. HDHP/SO plans differ from traditional health plans in several ways. First, HDHP/SO require the plan beneficiaries to pay for a specific level of healthcare services provided in a benefit year. This can amount to as much as $5,000 in some plans. Presumably, this creates better healthcare decision making by the beneficiaries because they seek more efficient medical services. Some have argued that some preventive services may be forgone because of high deductibles, which could result in costly care in the future. Covered services are often very similar in HDHP/SO plans because these plans are often related to traditional health plan coverage packages. Finally, many employers have viewed HDHP/SO plans as a means to shift cost to the employee for their healthcare benefits.
2. Healthcare benefit cost can be expressed as the product of utilization and price, which is the volume of services provided times the price paid for those services. Possible methods for reducing prices paid to providers would include selective contracting with the providers on a discounted basis, use of copayment provisions and deductibles to shift some of the cost to the insured health plan member, and development of a fee schedule for all providers that limit payments. Utilization options for reducing costs would include methods that either reduced the frequency of procedures or used less-expensive procedures. For example, better utilization review and prior authorization for medical procedures could be implemented. Case management of chronic conditions might also cut utilization by reducing the use of expensive inpatient procedures. Incentive structures for physicians, such as capitation payments or risk pools, might also be useful in decreasing utilization.
3. Aside from the legal filing requirements and increased government supervision of the PHO, it is also likely that certain reserve requirements must be maintained. These reserves may range from several hundred thousand dollars to several million dollars. This will create additional capital requirements for the PHO creation.
4. The critical issue to be resolved is the maximum amount of service that could be provided under the PMPM rate and still break even. In a fixed PMPM payment system, revenue is fixed, while costs vary with volume. The group needs to carefully consider the expected costs per unit. If total expected cost on a PMPM basis is less than the PMPM premium, it might make sense to accept the capitated rate.
5. **TABLE 7-9** calculates a required net PMPM rate of $138.50. When that rate is increased 15% to cover retention, the required PMPM rate would be $159.28.
6. **TABLE 7-10** provides the calculations for hospital payment under the two assumptions.

TABLE 7-9 PMPM Rate Calculations

Category	Annual Frequency per 1,000	Unit Cost	PMPM	Copay Frequency per 1,000	Copay Amount	Copay PMPM	Net PMPM
Hospital Inpatient							
Medical-surgical	400	$1,000	33.33	0	$0	–	33.33
Maternity	15	1,000	1.25	0	0	–	1.25
Mental health	50	400	1.67	0	0	–	1.67
Subtotal			36.25			–	36.25
Hospital Outpatient							
Surgery	100	$1,500	12.50	0	$0	–	12.50
X-ray and lab	500	300	12.50	0	0	–	12.50
Emergency department	150	300	3.75	150	50	0.63	3.12
Subtotal			28.75			0.63	28.13

Category	Annual Frequency per 1,000	Unit Cost	PMPM	Copay Frequency per 1,000	Copay Amount	Copay PMPM	Net PMPM
Physician							
Inpatient surgery	100	$2,000	16.67	0	$0	–	16.67
Outpatient surgery	500	300	12.50	0	0	–	12.50
Office visits	5,000	100	41.67	5,000	10	4.17	37.50
Inpatient visits	250	150	3.13	0	0	–	3.13
Mental health	400	150	5.00	400	20	0.67	4.33
Subtotal			78.96			4.83	74.13
Total			143.96			5.46	138.50

TABLE 7-10 Hospital Payment by Patient-Day Level

Patient-Day Level	Hospital Payment (at $900 per Day)	Risk Pool (Budget Payment)	Hospital Share of Risk Pool (50%)	Total Hospital Payment
550 PD per 1,000	$12,375,000	($750,000)	negative/0 share	$12,375,000
430 PD per 1,000	9,675,000	1,950,000	975,000	$10,650,000

CHAPTER 8

General Principles of Accounting

LEARNING OBJECTIVES

After studying this chapter, you should be able to do the following:

1. Describe the differences between financial and managerial accounting.
2. Understand core principles of accounting that guide the preparation and dissemination of financial information.
3. Discuss the differences between the accrual- and cash-basis methods of accounting.
4. List the three categories of net assets.
5. Discuss the accounting conventions that affect the application of accounting principles.

REAL-WORLD SCENARIO

Lindsay Harris was appointed recently to the Board of St. Thomas's Nursing Center, a religious nursing home in her community. Lindsay's first committee assignment was to the Finance Committee because of her prior business experience. Lindsay however has no understanding of accounting or financial issues because her career to date has been in the area of public relations. She is currently reviewing St. Thomas's quarterly financial statements in preparation for the Finance Committee's meeting. She is overwhelmed by the amount of detailed financial and operating data that is presented in the documents, but has noticed a dramatic decline in operating cash available. At the close of the most recent quarter St. Thomas's had consumed 50% of the beginning cash and currently had less than 10 days of average operating expenses available. Melody Ross, CFO at St. Thomas's, indicated in her narrative accompanying the quarterly statements that the recently completed quarter was outstanding from a financial perspective. Net income was up over 50% from the prior quarter and 75% above the same quarter last year. Melody explained that the primary reason for the improvement was the negotiation of a contract with a health plan to treat rehabilitation patients who would be transferred from local hospitals. This arrangement has led to a substantial increase in revenue, far above initial budgetary expectations. The provision of care is expected to be very profitable to St. Thomas's because the marginal cost of care provided to these patients is estimated to be less

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than 40% of the marginal revenue received. Patient accounting had difficulty, however, in implementing appropriate billing procedures and only recently were invoices sent to the health plan.

Melody made no mention of the erosion in cash position in her report to the Finance Committee, and Lindsay wonders how cash can decline so dramatically when profits are supposedly so strong. On further review of the financial statements she noted that St. Thomas's accounts receivable were up over 30% from beginning values. The increase in receivables almost matches the decline in cash. Lindsay is puzzled by this and wants to know if there is some relationship between cash balances and accounts receivable. She remembers from an accounting course taken more than 20 years ago that there was a difference between cash accounting and accrual accounting. Perhaps this could be the explanation for the erosion in cash position, but Lindsay is still concerned about St. Thomas's ability to pay near-term expenditures for payroll, supplies, and maturing debt.

Information does not happen by itself; an individual or a formally designed system must generate it. Financial information is no exception. The system and practice of accounting generates most financial information to provide quantitative data, primarily financial in nature, that are useful in making economic decisions about economic entities. In general, the term **accounting** refers to the process and principles for preparing and disseminating financial information. This chapter will present a general understanding of those principles and processes.

Learning Objective 1

Describe the differences between financial and managerial accounting.

Financial Versus Managerial Accounting

Accounting can be divided into two categories: financial accounting and managerial accounting. **Financial accounting** is the branch of accounting that provides general-purpose financial statements or reports to aid many decision-making groups, internal and external to the organization, in making a variety of decisions. The primary outputs of financial accounting are four financial statements that detail the organization's current financial position and how the organization reached that position over some period of time (usually 1 year). These statements will be described in detail in Chapter 9. The four statements are:

- Balance sheet
- Statement of operations (or income statement or statement of revenues and expenses)
- Statement of cash flows
- Statement of changes in net assets (or statement of changes in shareholders' equity)

The field of financial accounting is restricted in many ways regarding how certain events or business transactions may be accounted for. The term **generally accepted accounting principles (GAAP)** is often used to describe the body of rules and requirements that shape the preparation of the four primary financial statements. For example, an organization's financial statements that have been audited by an independent **certified public accountant (CPA)** would bear the following language in an unqualified opinion:

> We have audited the accompanying combined balance sheets of Harris Memorial Hospital and Harris Community Foundation and subsidiaries (the Foundation) as of December 31, 20X7 and 20X6, and the related combined statements of operations, changes in net assets, and cash flows for the years then ended.
>
> Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.
>
> Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.
>
> An audit involves performing procedures to obtain audit evidence about the amounts

and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the Foundation's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Foundation's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the combined financial position of Harris Memorial Hospital and Harris Community Foundation and subsidiaries at December 31, 20X7 and 20X6, and the combined changes in their net assets and their cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

Financial accounting is not limited to preparation of the four statements. An increasing number of additional financial reports are being required, especially for external users for specific decision-making purposes. This is particularly important in the healthcare industry. For example, hospitals submit cost reports to a number of third-party payers, such as Blue Cross, Medicare, and Medicaid. They also submit financial reports to a large number of regulatory agencies, such as planning agencies, rate review agencies, service associations, and many others. In addition, CPAs often prepare financial projections that are used by investors in capital financing. These statements, although not usually audited by independent CPAs, are, for the most part, prepared in accordance with the same generally accepted accounting principles that govern the preparation of the four basic financial statements.

Managerial accounting is primarily concerned with the preparation of financial information for specific purposes, usually for internal users. Because this information is used within the organization, there is less need for a body of principles restricting its preparation. Presumably, the user and the preparer can meet to discuss questions of interpretation. Uniformity and comparability of information, which are desired goals for financial accountants, are clearly less important to management accountants. Where financial accounting has an emphasis on the recording and reporting of historical financial transactions, management accounting often has a focus on future periods. A budget is an example of a financial report that is often generated from a managerial accounting perspective.

Learning Objective 2

Understand core principles of accounting that guide the preparation and dissemination of financial information.

Principles of Accounting

In addressing the principles of accounting, we are concerned with both sets of accounting information—financial and managerial. Although managerial accounting has no formally adopted set of principles, it relies strongly on financial accounting principles. Understanding the principles and basics of financial accounting is therefore critical to understanding both financial and managerial accounting information.

In the text to follow, five specific principles of accounting are discussed:

1. Accounting entity
2. Money measurement
3. Duality
4. Cost valuation
5. Stable monetary unit

To better illustrate these principles, our discussion will include a case example of a newly formed, not-for-profit healthcare organization, which we refer to as "Alpha HCO."

Principle One: Accounting Entity

Obviously, in any accounting there must be an entity for which the financial statements (balance sheet, statement of operations, etc.) are being prepared. Specifying the entity on which the accounting will focus defines the information that is pertinent. Drawing these boundaries is the underlying concept behind the accounting entity principle. Essentially,

the **accounting entity** is the organization for which financial information will be recorded and reported.

Alpha HCO is the entity for which we will account and prepare financial statements. We are not interested in the individuals who may have incorporated Alpha HCO or other healthcare organizations in the community, but solely in Alpha HCO's financial transactions.

Defining the entity is not as clear-cut as one might expect. Significant problems arise, especially when the legal entity is different from the accounting entity. For example, if one physician owns a clinic through a sole proprietorship arrangement, the accounting entity may be the clinic operation, whereas the legal entity includes the physician and the physician's personal resources as well. A hospital may be part of a university or government agency, or it might be owned by a large corporation organized on a for-profit or not-for-profit basis. Indeed, as a result of corporate restructuring, many hospitals now have become subsidiaries of a holding company. Careful attention must be paid to the definition of the accounting entity in these situations. If the entity is not properly defined, evaluation of its financial information may be useless at best and misleading at worst.

The common practice of municipalities directly paying the fringe benefits of municipal employees employed in the hospital illustrates this situation. Such expenses may never show up in the hospital's accounts, resulting in an understatement of the expenses associated with running the hospital. In many cases, this may produce a bias in the rate-setting process. Clearly, a well-defined and communicated accounting entity is critical in recording and reporting financial information.

Principle Two: Money Measurement

Accounting in general and financial accounting in particular are concerned with measuring economic resources and obligations and their changing levels for the accounting entity under consideration. The accountant's yardstick for measuring is not metered to size, color, weight, or other attributes; it is limited exclusively to money. However, there are significant problems in money measurement, which will be discussed in the following text.

Economic resources are defined as scarce means, limited in supply but essential to economic activity. They include supplies, buildings, equipment, money, claims to receive money, and ownership interests in other enterprises. The terms *economic resources* and **assets** may be interchanged for most practical purposes. **Economic obligations** are responsibilities to transfer economic resources or provide services to other entities in the future, usually in return for economic resources received from other entities in the past through the purchase of assets, the receipt of services, or the acceptance of loans. For most practical purposes, the terms *economic obligations* and **liabilities** may be used interchangeably.

In most normal situations, assets exceed liabilities in money-measured value. Liabilities represent the claim of one entity on another's assets; any excess or remaining residual interest may be claimed by the owner. In fact, for entities with ownership interest, this residual interest is called **owner's equity**.

In most not-for-profit entities, including healthcare organizations, there is no residual ownership claim. Any assets remaining in a liquidated not-for-profit entity, after all liabilities have been dissolved, legally become the property of the state. Residual interest is referred to as **fund balance** or **net assets** for most not-for-profit healthcare organizations.

The use of the terms *assets, liabilities*, and *equity* (or net assets) can be easily understood in the common example of homeownership. To illustrate, let us assume that an individual purchases a $200,000 home. The individual uses $40,000 in personal cash and a bank mortgage of $160,000 to complete the purchase. At the end of the transaction, assuming no other financial information, the individual would have assets (historical value of items owned) of $200,000, liabilities (amount of items owed) of $160,000, and equity (the residual interest) of $40,000. As the individual pays off the mortgage balance, equity will increase. The relationship of assets, liabilities, and equity will be described in the "duality" principle discussion to follow.

In the Alpha HCO example, assume that the community donated $1,000,000 in cash to the healthcare organization at its formation, hypothetically assumed to be December 31, 20X2. At that time, a listing of its assets, liabilities, and net assets would have been prepared in a balance sheet and read as presented in **EXHIBIT 8-1**.

EXHIBIT 8-1 Alpha HCO's Balance Sheet at Formation

Alpha HCO Balance Sheet
December 31, 20X2

Assets	*Liabilities and Net Assets*
Cash $1,000,000	Net assets $1,000,000

Principle Three: Duality

One of the fundamental premises of accounting is a simple arithmetic requirement: the value of assets must always equal the combined value of liabilities and residual interest, which we have called net assets. This basic accounting equation, the **duality principle**, may be stated as follows:

$$\text{Assets} = \text{Liabilities} + \text{Net assets}$$

This requirement means that a balance sheet (where the values for assets, liabilities, and net assets are provided) will always balance: the value of the assets will always equal the value of claims, whether liabilities or net assets, on those assets.

Changes are always occurring in organizations that affect the value of assets, liabilities, and net assets. These changes are called *transactions* and represent the items that interest accountants. Examples of transactions are borrowing money, purchasing supplies, and constructing buildings. The important thing to remember is that cash transactions must be carefully analyzed under the duality principle to keep the basic accounting equation in balance.

To better understand how important this principle is, let us analyze several transactions in our Alpha HCO example:

- Transaction 1. On January 2, 20X3, Alpha HCO buys a piece of equipment for $100,000. The purchase is financed with a $100,000 note from the bank.
- Transaction 2. On January 3, 20X3, Alpha HCO buys a building for $2,000,000, using $500,000 cash and issuing $1,500,000 worth of 20-year bonds.
- Transaction 3. On January 4, 20X3, Alpha HCO purchases $200,000 worth of supplies from a supply firm on a credit basis.

If balance sheets were prepared after each of these three transactions, they would appear as presented in **EXHIBIT 8-2**. In each of these three transactions, the change in asset value is matched by an identical change in liability value. Thus, the basic accounting equation remains in balance.

It should be noted that, as the number of transactions increases, the number of individual asset and liability items also increases. In most organizations, there is a large number of these individual items, which are referred to as **accounts**. The listing of these accounts is often called a *chart of accounts*; it is a useful device for categorizing transactions related to a given healthcare organization. There is already significant uniformity among hospitals and other healthcare facilities in the chart of accounts used; however, there is also pressure, especially from external users of financial information, to move toward even more uniformity. You may not recognize each of the accounts listed in the transaction examples. However, the key thing to learn from these examples is that individual asset, liability, and net asset accounts will always create a balance through the duality principle.

Principle Four: Cost Valuation

Many readers of financial statements make the mistake of assuming that reported balance sheet values represent the real worth of individual assets or liabilities. Asset and liability values reported in a balance sheet are based on their *historical* or *acquisition* cost. In most situations, asset values do not equal the amount of money that could be realized if the assets were sold. However, in many cases, the reported value of a liability in a balance sheet is a good approximation of the amount of money that would be required to extinguish the indebtedness.

Examining the alternatives to historical cost valuation helps clarify why the cost basis of valuation is used. The two primary alternatives to historical cost valuation of assets and liabilities are **market value** and **replacement cost** valuation.

Valuation of individual assets at their market value sounds simple enough and appeals to many users of financial statements. Creditors especially are often interested in what values assets would bring if liquidated. Current market values give decision makers an approximation of liquidation values.

The market value method's lack of objectivity, however, is a serious problem. In most normal situations, established markets dealing in secondhand merchandise do not exist. Decision makers must rely on individual appraisals. Given the current state of the art of appraisal, two appraisers are likely to produce different estimates of market value for identical assets. Accountants' insistence on objectivity in measurement thus eliminates market valuation of assets as a viable alternative.

Replacement cost valuation of assets measures assets by the money value required to replace them. This concept of valuation is extremely useful for many decision-making purposes. For example, management decisions to continue delivery of certain services should be affected by the replacement cost of resources, not their historical or acquisition cost—which is considered to be a **sunk cost**, irrelevant to future decisions. Planning agencies or other regulatory agencies also should consider estimates

EXHIBIT 8-2 Alpha HCO's Balance Sheet, Transactions 1 Through 3

Transaction 1

Alpha HCO Balance Sheet
January 2, 20X3

Assets		*Liabilities and Net Assets*	
Cash	$1,000,000	Notes payable	$100,000
Equipment	100,000	Net assets	1,000,000
Total	$1,100,000	Total	$1,100,000

Assets: Increase $100,000 (equipment increases by $100,000)
Liabilities: Increase $100,000 (notes payable increase by $100,000)

Transaction 2

Alpha HCO Balance Sheet
January 3, 20X3

Assets		*Liabilities and Net Assets*	
Cash	$500,000	Notes payable	$100,000
Equipment	100,000	Bonds payable	1,500,000
Building	2,000,000	Net assets	1,000,000
Total	$2,600,000	Total	$2,600,000

Assets: Increase $1,500,000 (cash decreases by $500,000 and building increases by $2,000,000)
Liabilities: Increase $1,500,000 (bonds payable increase by $1,500,000)

Transaction 3

Alpha HCO Balance Sheet
January 4, 20X3

Assets		*Liabilities and Net Assets*	
Cash	$500,000	Accounts payable	$200,000
Supplies	200,000	Notes payable	100,000
Equipment	100,000	Bonds payable	1,500,000
Building	2,000,000	Net assets	1,000,000
Total	$2,800,000	Total	$2,800,000

Assets: Increase $200,000 (supplies increase by $200,000)
Liabilities: Increase $200,000 (accounts payable increases by $200,000)

of replacement cost to avoid bias. Considering only historical cost may improperly make old facilities appear more efficient than new or proposed facilities and projects.

Replacement cost may be a useful concept of valuation; however, it too suffers from lack of objectivity in measurement. Replacement cost valuation depends on how an item is replaced. For example, given the rate of technologic change in the general economy, especially in the healthcare industry, few assets today would be replaced with like assets. Instead, more refined or capable assets probably would replace them. What is the replacement cost in this situation? Is it the cost of the new, improved asset or the present cost of an identical asset that most likely would not be purchased? Compound this

question by the large number of manufacturers selling roughly equivalent items and you have some idea of the inherent difficulty and subjectivity in replacement cost valuation.

Historical cost valuation, with all its faults, is thus the basis that the accounting profession has chosen to value assets and liabilities in most circumstances. Accountants use it rather than replacement cost largely because it is more objective. Over the years, there has been some fairly strong pressure from inside and outside the accounting profession to switch to replacement cost valuation, but it is still uncertain whether this pressure will be successful.

One final, important point should be noted: at the time of initial asset valuation, the values assigned by historical cost valuation and replacement cost valuation are identical. The historical cost value is most often criticized for assets that have long, useful lives, such as buildings and equipment. Over a period of many years, the historical cost and replacement cost values tend to diverge dramatically, in part because general **inflation** in our economy erodes the dollar's purchasing power. A dollar of today is simply not as valuable as a dollar of 10 years ago. This problem could be remedied, without sacrificing the objectivity of historical cost measurement, by selecting a unit of purchasing power as the unit of measure: transactions then would not be accounted in dollars but in dollars of purchasing power at a given point in time, usually the year for which the financial statements are being prepared. This issue is addressed in the next section, under Principle Five: Stable Monetary Unit.

Required Return on Investment and Valuation Alternatives

Business firms, both voluntary not-for-profit and investor-owned, must produce returns on their investment greater than the cost of capital used to finance their investment. The **cost of capital** refers to the cost of debt or equity in financing the acquisition of an asset. Certainly, it would not be wise for a business to borrow money at 10% (cost of debt) and invest the proceeds in projects earning only 5%. Valuation of the investment at cost, market value, or replacement cost can have a significant effect on basic business decisions such as expansion or closure. To illustrate this point, consider James Nursing Home, a fictitious voluntary not-for-profit clinic, with the financial data presented in **TABLE 8-1**.

Return on investment (ROI) for James Nursing Home is 12.5% under a historical cost valuation ($10,000 ÷ $80,000), 6.7% under replacement cost valuation ($10,000 ÷ $150,000), and 16.7% under a market value valuation ($10,000 ÷ 60,000). What should the management and board of James Nursing Home do?

TABLE 8-1 Financial Data for James Nursing Home—20X4

Cash flow	$10,000
Cost of capital	12%
Investment—Historical cost	$80,000
Investment—Replacement cost	$150,000
Investment—Market value	$60,000

First, the ROI calculated under cost valuation is meaningless for future decisions. An ROI based on historical cost tells you how well the investment has done, not how well it will do in the future. ROI calculated under replacement cost valuation will tell the decision maker the return using current replacement cost values. In our example, the James Nursing Home is not profitable given current replacement cost values and is not viable in the future. Unless expectations about future cash flows change, the nursing home should not receive significant new investment. ROI calculated under market values shows the James Nursing Home to be viable in the short run. It is

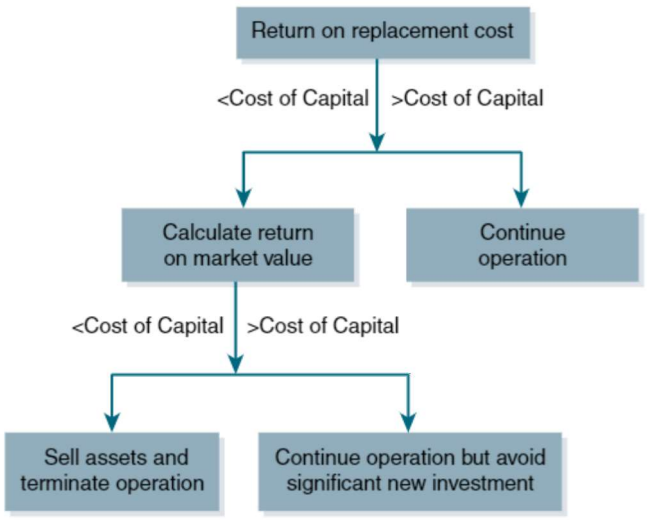

FIGURE 8-1 Return on Investment Relationships

generating an ROI of 16.7%, which exceeds its cost of capital, 12%. **FIGURE 8-1** illustrates the decision framework.

Principle Five: Stable Monetary Unit

The money measurement principle of accounting discussed earlier restricted accounting measures to money. In accounting in the United States, the unit of measure is the dollar. At the present time, no adjustment to changes in the general purchasing power of that unit is required in financial reports; a year-2007 dollar is assumed to be equal in value to a 2017 dollar. This permits arithmetic operations, such as addition and subtraction. If this assumption were not made, addition of the unadjusted historical cost values of assets acquired during different periods would be inappropriate, like adding apples and oranges. Current generally accepted accounting principles incorporate the stable monetary unit principle.

The stable monetary unit principle may not seem to pose any great problems. However, even modest rates of inflation at around 4% per year can quickly compound to produce major financial distortions. For example, $1.00 paid in the year 2025 would be equivalent to $0.67 paid in 2015 with a 4% annual inflation rate. To present an extreme example, imagine that the inflation rate in the economy is currently 100%, compounded monthly. Consider a neighborhood healthcare center that has all its expenses, except payroll, covered by grants from governmental agencies. Its employees have a contract that automatically adjusts their wages to changes in the general price level. (With a monthly inflation rate of 100%, it is no wonder.) Assume that revenues from patients are collected on the first day of the month after the one in which they were billed, but that the employees are paid at the beginning of each month. Rates to patients are set so that the excess of revenues over expenses will be zero. With the first month's wages set equal to $100,000, the income and cash flow positions presented in **TABLE 8-2** result for the first 6 months of the year.

Note the tremendous difference between income and cash flow. Although the income statement would indicate a break-even operation, the cash balance at the end of June would be a negative $3,150,000. Obviously, the healthcare center's operations cannot continue indefinitely in light of the extreme cash hardship position imposed.

Fortunately, the rate of inflation in our economy is not 100%. However, smaller rates of inflation compounded over long periods could create similar problems. For example, setting rates equal to historical cost depreciation of fixed assets leaves the entity with a significant cash deficit when it is time to replace the asset. Many healthcare boards and management organizations of not-for-profit firms do not adequately reflect increasing replacement costs in their pricing.

TABLE 8-2 Sample Income and Cash Flows, 100% Inflation

	Income Flows			Cash Flows		
Expense	**Revenue**	**Net income**	**Inflow**	**Outflow**	**Difference**	**Income**
January	$100,000	$100,000	0	$50,000*	$100,000	(50,000)
February	200,000	200,000	0	100,000	200,000	(100,000)
March	400,000	400,000	0	200,000	400,000	(200,000)
April	800,000	800,000	0	400,000	800,000	(400,000)
May	1,600,000	1,600,000	0	800,000	1,600,000	(800,000)
June	3,200,000	3,200,000	0	1,600,000	3,200,000	(1,600,000)
	$6,300,000	$6,300,000	0	$3,150,000	$6,300,000	($3,150,000)

Note: $50,000 is equal to the revenue billed in December.

Learning Objective 3

Discuss the differences between the accrual- and cash-basis methods of accounting.

Accrual Versus Cash Accounting

Accrual accounting is a fundamental premise of accounting. It means that transactions of a business enterprise are recognized during the period to which they relate, not necessarily during the periods in which cash is received or paid. The latter part of this definition refers to **cash-basis accounting**.

It is common to hear people talk about the differences between these two forms of accounting. Most of us think in cash-basis terms. We measure our personal financial success during the year by the amount of cash we realized. Seldom do we consider such things as wear and tear on our cars and other personal items or the differences between earned and uncollected income. Perhaps if we accrued expenses for items such as depreciation on heating systems, air conditioning systems, automobiles, and furniture, we might see a different picture of our financial well-being.

The accrual basis of accounting significantly affects the preparation of financial statements in general; however, its major impact is on the preparation of the statement of revenues and expenses. The following additional transactions for Alpha HCO illustrate the importance of the accrual principle:

- Transaction 4: Alpha HCO bills patients $100,000 on January 16, 20X3, for services provided to them.
- Transaction 5: Alpha HCO pays employees $60,000 for their wages and salaries on January 18, 20X3.
- Transaction 6: Alpha HCO receives $80,000 in cash from patients who were billed earlier in Transaction 4 on January 23, 20X3.
- Transaction 7: Alpha HCO pays the $200,000 of accounts payable on January 27, 20X3, for the purchase of supplies that took place on January 4, 20X3.

Balance sheets prepared after each of these transactions appear as presented in **EXHIBIT 8-3**. In Transactions 4 and 5, there is an effect on Alpha HCO's residual interest or its fund balance (also referred to as net assets or equity). In Transaction 4, an increase in net assets occurred because patients were billed for services previously rendered. Increases in net assets or owners' equity resulting from the sale of goods or delivery of services are called **revenues**. It should be noted that this increase occurred even though no cash was actually collected until January 23, 20X3, illustrating the accrual principle of accounting. Recognition of revenue occurs when the revenue is earned, not necessarily when it is collected.

In Transaction 5, a reduction in fund balance (net assets) occurs. Costs incurred by a business enterprise to provide goods or services that reduce net assets or owners' equity are called **expenses**. Under the accrual principle, expenses are recognized when assets are used up or liabilities are incurred in the production and delivery of goods or services, not necessarily when cash is paid.

EXHIBIT 8-3 Alpha HCO's Balance Sheet, Transactions 4 Through 7

Transaction 4

Alpha HCO Balance Sheet
January 16, 20X3

Assets		*Liabilities and Net Assets*	
Cash	$500,000	Accounts payable	$200,000
Accounts receivable	100,000	Notes payable	100,000
Supplies	200,000	Bonds payable	1,500,000
Equipment	100,000	Net assets	1,100,000
Building	2,000,000		
Total	$2,900,000	Total	$2,900,000

Assets: Increase $100,000 (accounts receivable increases by $100,000)
Net assets: Increase $100,000

(continues)

EXHIBIT 8-3 Alpha HCO's Balance Sheet, Transactions 4 Through 7 *(continued)*

Transaction 5

Alpha HCO Balance Sheet
January 18, 20X3

Assets		*Liabilities and Net Assets*	
Cash	$440,000	Accounts payable	$200,000
Accounts receivable	100,000	Notes payable	100,000
Supplies	200,000	Bonds payable	1,500,000
Equipment	100,000	Net assets	1,040,000
Building	2,000,000		
Total	$2,840,000	Total	$2,840,000

Assets: Decrease by $60,000 (cash decreases by $60,000)
Net assets: Decrease by $60,000

Transaction 6

Alpha HCO Balance Sheet
January 23, 20X3

Assets		*Liabilities and Net Assets*	
Cash	$520,000	Accounts payable	$200,000
Accounts receivable	20,000	Notes payable	100,000
Supplies	200,000	Bonds payable	1,500,000
Equipment	100,000	Net assets	1,040,000
Building	2,000,000		
Total	$2,840,000	Total	$2,840,000

Assets: No change (cash increases by $80,000; accounts receivable decrease by $80,000)

Transaction 7

Alpha HCO Balance Sheet
January 27, 20X3

Assets		*Liabilities and Net Assets*	
Cash	$320,000	Accounts payable	$0
Accounts receivable	20,000	Notes payable	100,000
Supplies	200,000	Bonds payable	1,500,000
Equipment	100,000	Net assets	1,040,000
Building	2,000,000		
Total	$2,640,000	Total	$2,640,000

Assets: Decrease by $200,000 (cash decreases by $200,000)
Liabilities: Decrease by $200,000 (accounts payable decrease by $200,000)

The difference between revenue and expense is often referred to as *net income*. In the hospital and healthcare industry, this term may be used interchangeably with the term **excess of revenues over expenses** or *revenues and gains in excess of expenses*.

The income statement, or statement of operations, summarizes the revenues and expenses of a business enterprise over a defined period. If an income statement is prepared for the total life of an entity, that is, from inception to dissolution, the value for net income would be the same under both an accrual and a cash basis method of accounting.

In most situations, frequent measurements of revenue and expense are demanded, creating some important measurement problems. Ideally, under the accrual accounting principle, expenses should be matched to the revenue that they helped create. For example, wage, salary, and supply costs usually can be easily associated with revenues of a given period. However, in certain circumstances, the association between revenue and expense is impossible to discover, necessitating the accountant's use of a systematic, rational method of allocating costs to a benefiting period. In the best example of this procedure, costs such as those associated with building and equipment are spread over the estimated useful life of the assets through the recording of depreciation.

To complete the Alpha HCO example, assume that the financial statements must be prepared at the end of January. Before they are prepared, certain adjustments must be made to the accounts to adhere fully to the accrual principle of accounting. The following adjustments might be recorded.

- Adjustment 1: There are currently $100,000 of patient charges that have been incurred but not yet billed.
- Adjustment 2: There are currently $50,000 worth of unpaid wages and salaries for which employees have performed services.
- Adjustment 3: A physical inventory count indicates that $50,000 worth of initial supplies have been used.
- Adjustment 4: The equipment of Alpha HCO has an estimated useful life of 10 years, and the cost is being allocated over this period. On a monthly basis, this amounts to an allocation of $833 per month.
- Adjustment 5: The building has an estimated useful life of 40 years, and the cost of the building is being allocated equally over its estimated life. On a monthly basis, this amounts to $4,167.
- Adjustment 6: Although no payment has been made on either notes payable or bonds payable, there is an interest expense associated with using money for this 1-month period. This interest expense will be paid later. Assume that the note payable carries an interest rate of 8% and the bond payable carries an interest rate of 6%. The actual amount of interest expense incurred for the month of January would be $8,167 ($667 on the note and $7,500 on the bond payable).

The effects of these adjustments on the balance sheet of Alpha HCO and on the ending balance sheet that would be prepared after all the adjustments were made, are presented in **EXHIBIT 8-4** (with explanations in **TABLE 8-3**). It is also possible to prepare the statement of revenues and expenses presented in **EXHIBIT 8-5**.

Note that the difference between revenue and expense during the month of January was $26,833, the exact amount by which the net assets of Alpha HCO changed during the month. Alpha HCO began the month with $1,000,000 in its net asset account and ended with $1,026,833. This illustrates an important point to remember when reading financial statements: the individual financial statements are fundamentally related to one another.

EXHIBIT 8-4 Alpha HCO Balance Sheet: January 31, 20X3

Assets		*Liabilities and Net Assets*	
Cash	$320,000	Wages and salaries payable	$50,000
Accounts receivable	120,000	Interest payable	8,167
Supplies	150,000	Notes payable	100,000
Equipment	99,167	Bonds payable	1,500,000
Building	1,995,833	Net assets	1,026,833
Total	$2,685,000	Total	$2,685,000

TABLE 8-3 End of Period Adjusting Entries and End of Month Balance Sheet

Adjustment	Change	Account(s) Increased	Account(s) Decreased
1	$100,000	Net assets and accounts receivable	None
2	$50,000	Wages and salaries payable	Net assets
3	$50,000	None	Net assets and supplies
4	$833	None	Net assets and equipment
5	$4,167	None	Net assets and building
6	$8,167	Interest payable	Net assets

EXHIBIT 8-5 Alpha HCO Statement of Revenue and Expenses: For Month Ended January 31, 20X3

Revenues	$200,000
Less expenses	
Wages and salaries	$110,000
Supplies	50,000
Depreciation	5,000
Interest	8,167
Total	$173,167
Excess of revenue over expenses	$26,833

Learning Objective 4

List the three categories of net assets.

Fund Accounting

Fund accounting is a system in which an entity's assets and liabilities are segregated in the accounting records. Each fund may be considered an independent entity with its own self-balancing set of accounts. The basic accounting equation discussed under "duality" must be satisfied for each fund: assets must equal liabilities plus net assets for the particular fund in question.

The Financial Accounting Statement Board (FASB) pronouncement 117 changed the nature of fund accounting for voluntary not-for-profit healthcare organizations. It stipulated that only three classifications of fund balance or net assets be used:

1. Unrestricted net assets
2. Temporarily restricted net assets
3. Permanently restricted net assets

The last two categories of net assets, temporarily and permanently restricted net assets, are related to the existence of a *donor-imposed restriction*. The difference between the two is based on the nature of the donor's restriction. **Temporarily restricted net assets** are funds that can be used for a specific purpose only, funds that may be released for a specific purpose only, or funds that may be released for general purposes after a passage of time. **Permanently restricted net assets** are often of an endowment nature. Only the income of the fund can be used, and the principal cannot be used to fund any purpose. Generally, donor-restricted net assets can consist of the following three common types:

- Specific-purpose funds
- Plant replacement and expansion funds
- Endowment funds

Specific-purpose funds are donated by individuals or organizations and restricted for purposes other than plant replacement and expansion or endowment. Monies received from government agencies to perform specific research or other work are examples of specific-purpose funds.

Plant replacement and expansion funds are restricted for use in plant replacement and expansion. Assets purchased with these monies are not recorded in the fund. When the monies are used for plant purposes, the amounts are transferred to the unrestricted net assets. For example, if $200,000 in cash from the

plant replacement fund were used to acquire a piece of equipment, equipment and unrestricted net assets would be increased.

Endowment funds are contributed to be held intact for generating income. The income may or may not be restricted for specific purposes. Some endowments are classified as "term" endowments. That is, after the expiration of some period, the restriction on use of the principal is lifted. The balance is then transferred to the general fund.

Learning Objective 5

Discuss the accounting conventions that affect the application of accounting principles.

Conventions of Accounting

The accounting principles discussed up to this point are important in the preparation of financial statements. However, several widely accepted conventions modify the application of these principles in certain circumstances. Three of the more important conventions are discussed next:

1. Conservatism
2. Materiality
3. Consistency

Conservatism affects the valuation of some assets. Specifically, accountants use a "lower of cost or market" rule for valuing inventories and marketable securities. The lower of cost or market rule means that the value of a stock of inventory or **marketable securities** would be the actual cost or market value, whichever is less. For these resources, there is a deviation from cost valuation to market valuation whenever market value is lower.

Materiality permits certain transactions to be treated out of accordance with generally accepted accounting principles. This might be permitted because the transaction does not materially affect the presentation of financial position. For example, theoretically, paper clips may have an estimated useful life greater than 1 year. However, the cost of capitalizing this item and systematically and rationally allocating it over its useful life is not justifiable; the difference in financial position that would be created by not using generally accepted accounting principles would be immaterial.

Consistency limits the accounting alternatives that can be used. In any given transaction, there is usually a variety of available, generally acceptable, accounting treatments. For example, generally accepted accounting principles permit the use of double-declining balance, sum-of-the-years' digits, or straight-line methods for allocating the costs of depreciable assets over their estimated useful life; but the consistency convention limits an entity's ability to change from one acceptable method to another.

SUMMARY

In this chapter, we discussed the importance of generally accepted accounting principles in deriving financial information. Although these principles are formally required only in the preparation of audited financial statements, they influence the derivation of most financial information. An understanding of some of the basic principles is critical to an understanding of financial information in general.

The following five specific principles of accounting were discussed in some detail:

1. Accounting entity
2. Money measurement
3. Duality
4. Cost valuation
5. Stable monetary unit

In addition to these, the importance accrual and fund accounting as it relates to the hospital and healthcare industry was discussed. The chapter concluded with a discussion of three conventions that may modify the application of generally accepted accounting principles in specific situations.

ASSIGNMENTS

1. ABC Medical Center has undergone a recent corporate reorganization. The structure presented in **FIGURE 8-2** resulted. What difficulties might be experienced in preparing financial statements for the ABC Hospital?
2. Does the value of total assets represent the economic value of the entity?
3. What is the difference between stockholders' equity and net assets or unrestricted net assets?
4. A home healthcare firm has purchased five automobiles. Each automobile costs $24,000 and has an estimated useful life of 3 years. Each year, the replacement cost of the automobiles is expected to increase 10%. At the end of the third year, replacement cost is $31,944. The firm anticipates that each automobile will be used to make 1,500 patient visits per year. If the firm prices each visit to recover just the historical cost of the automobiles, it will include a capital cost of $5.33 per visit ($24,000 divided by 4,500 total visits). Assuming the revenue generated

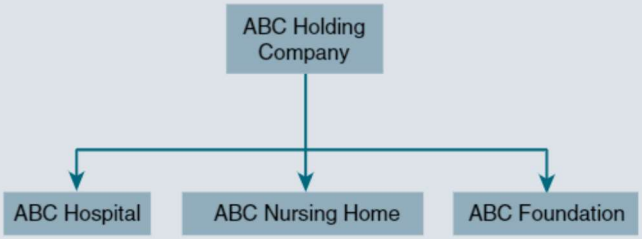

FIGURE 8-2 ABC Medical Center's Reorganization

from this capital charge is invested at 10%, will the firm have enough funds available to meet its replacement cost? How would this situation change if price-level depreciation were used to establish the capital charge?

5. A health maintenance organization (HMO) has just been formed. During its first year of operations, the organization reported an accounting loss of $500,000. Cash flow during the same period was a positive $500,000. How might this situation exist, and which measure better describes financial performance?
6. What is the difference between restricted and unrestricted net assets?
7. Why is consistency in financial reporting critical to fairness in financial representation?
8. Describe the primary differences between financial and managerial accounting.

SOLUTIONS AND ANSWERS

1. It may be difficult to associate specific assets and liabilities for the ABC Hospital. For example, debt may have been issued by the holding company to finance projects for both the hospital and the nursing home. In addition, commonly used assets may be involved, such as a dietary department providing meals for both hospital and nursing home patients. Some expenses also may be difficult to trace to either the hospital or the nursing home. For example, how should expenses that are common to the hospital, the nursing home, and the foundation (such as administrative expenses of the holding company) be allocated? Thus, many problems of "jointness" may make preparation of the financial statements for the hospital difficult, but such statements are still likely to be a necessity for adequate planning and control.
2. Only coincidentally would the value of total assets equal the economic value of the entity. Total assets, as reported in the balance sheet, represent the undepreciated historical cost of assets acquired by the entity. Economic value of an entity is related to the discounted value of future earnings or the market value of the entity if sold.
3. Both stockholders' equity and net assets or unrestricted net assets represent the difference between total assets and total liabilities. Stockholders' equity is used in investor-owned corporations to designate the residual owners' claims. Net assets are used in not-for-profit corporations in which there is no residual ownership interest.
4. **TABLE 8-4** presents data relevant to the pricing decision of the home healthcare firm regarding the five automobiles. Funds available are shown with historical cost depreciation per automobile. **TABLE 8-5** presents

TABLE 8-4 Historical Cost Depreciation for Home Healthcare Firm's Automobiles

	Depreciation	Years Invested (10%)	Value, End of Third Year
Year 1	$8,000	2	$9,680
Year 2	8,000	1	8,800
Year 3	8,000	0	8,000
	$24,000		$26,480

Shortage = $31,944 – $26,480 = $5,464 per automobile

TABLE 8-5 Price-Level Depreciation for Home Healthcare Firm's Automobiles

	Depreciation	Years Invested (10%)	Value, End of Third Year
Year 1	$8,800	2	$10,648
Year 2	9,680	1	10,648
Year 3	10,648	0	10,648
	$29,128		$31,944

Price-level depreciation in year $t = (\$24{,}000\ [1.10]^t) \div 3$ Shortage $= \$31{,}944 - \$31{,}944 = 0$

funds available with price-level depreciation per automobile. Thus, the prices should be set equal to expected replacement cost. Clearly, pricing services to recover capital costs is critical to long-term financial survival.

5. The HMO could have received large payments in advance for providing health services to major employers. This would mean that a liability to provide future services exists. Both accounting loss and cash flow are important in assessing financial performance. The accounting loss is symbolic of a critical operational problem regarding revenue and expense relationships. The positive cash flow may be temporary unless revenue exceeds expenses in future periods.
6. A restricted fund has a third-party donor restriction placed on the use of the funds. An unrestricted fund has no such restriction.
7. Changes in financial reporting can impair the comparability of financial results between years for a given firm.
8. Financial accounting has its primary focus on external financial reporting through the preparation and dissemination of the four primary financial statements. Managerial accounting is more internally focused, providing information within the organization to measure, monitor, and facilitate performance improvement.

CHAPTER 9

Financial Statements

LEARNING OBJECTIVES

After studying this chapter, you should be able to do the following:

1. Explain why it is important to know the scope of business being reviewed when using financial statements.
2. Understand the format and content of the balance sheet.
3. Understand the format and content of the statement of operations.
4. Understand the format and content of the statement of changes in net assets.
5. Understand the format and content of the statement of cash flows.

REAL-WORLD SCENARIO

Ed Adams, a 2004 graduate of a well-respected health administration graduate program, recently accepted a job offer to work as a financial analyst in the controller's office at Northern Healthcare Corporation (NHC), an investor-owned provider of outpatient and rehabilitative healthcare services. Ed, who will start his job next month, has obtained the company's financial statements for the past several years so that he can better understand the company's recent financial position and performance.

Ed already knew that NHC owns nearly 200 rehabilitation facilities and ambulatory surgery centers across the United States. In recent years NHC had expanded rapidly through multiple acquisitions, new facilities, and growth at existing facilities. Yet, even with this rapid growth, Ed knew that the financial performance had been unsatisfactory in recent years and that management was feeling intense pressure by shareholders to improve its performance.

Upon his first inspection of NHC's financial statements, Ed noticed that the financial statements were in accordance with the provisions of Statement of Financial Accounting Standards (SFAS) No. 131, "Disclosures about Segments of an Enterprise and Related Information," which were issued by the Financial Accounting Standards Board (FASB) in 1997. Ed had learned in school that SFAS 131 requires an enterprise to report operating segments based on the way its operations are managed. This approach defines operating segments along the lines used by management to assess performance and to make operating and resource allocation decisions. Among other requirements, Ed knew that segments must be segregated by product and service, by geographic area, by legal entity, and by type of customer. In the case of NHC, based on its management and reporting structure, segment information was presented for inpatient and other clinical services and outpatient services.

Opener image: © A1Stock/Shutterstock

Ed now looked closer at the company's balance sheet. He noticed that the company's cash balance has been steadily declining in recent years, while inventories were rising. Given the company's rapid growth, Ed was not surprised to see that total assets had risen substantially over the past few years. But he was concerned that the amount of long-term debt had just about doubled over a recent 2-year period.

Ed then turned to the income statement. Despite the company's increased leverage, as reflected by the substantial rise in debt, the company's earnings per share had fallen by about 80% in recent years compared with its high just a few years ago. The declining income was all the more surprising because revenues had risen by one-third over the same period. At first, this seemed paradoxical to Ed. Then, he noticed that the company's discounts and allowances had risen by upward of 500% over this period. Perhaps, he thought, this figure helps to explain the recent poor performance.

Ed realized that trying to more fully understand the company's financial performance would require a lot of time and effort. He would have to study the company's four major financial statements in greater detail. Additionally, he would need to read the accompanying footnotes to the financial statements and would need to supplement with additional knowledge of economic, regulatory, and other factors to get a more accurate sense of why NHC's financial performance had deteriorated so much in recent years.

Previously, we presented the principles of accounting that are necessary in organizing and preparing financial statements for an organization. These statements tell a story of where the organization is financially, and, how it arrived there. To many people, financial statements seem confusing. However, a general understanding of the format and content of these statements can yield financial literacy. At the conclusion of this chapter, you should be able to read and understand the four primary financial statements.

First, let's briefly discuss what the four statements are and what information is available in each. The **balance sheet** presents a record of an organization's assets, liabilities, and net assets (equity) at a specific point of time. In essence, it is a financial snapshot of the organization at a certain date. The **statement of operations** (also known as the income statement or statement of revenues and expenses) details the organization's revenues and expenses during the **accounting period**—typically, 1 year. If the balance sheet is a snapshot, the statement of operations can be thought of as a video clip showing the running total of funds generated and expended during the period. The **statement of changes in net assets** (or statement of changes in shareholders' equity) lists how net assets (or equity) changed during the period, and the **statement of cash flows** describes how cash was generated and used. Finally, the **notes to the financial statements** provide detail on the organization's structure, accounting practices, and financial standing. The notes are not considered to be a part of the four primary statements; however, they are critical in any financial assessment of an organization. When the statements above are prepared and reviewed by an external, independent accounting firm they are collectively referred to as **audited financial statements**.

In order to learn the format and content of audited financial statements, we will use a case example for a not-for-profit healthcare entity: Harris Memorial Hospital and Harris Community Foundation (jointly abbreviated HCF). The complete audited financial statements can be found in **Appendix 9-A**. Although the document's size appears overwhelming, our step-by-step discussion will hopefully make the information manageable and useful.

Learning Objective 1

Explain why it is important to know the scope of business being reviewed when using financial statements.

Organizational Structure

The first information available in any audited financial statement is the organization for which the statements represent. As seen in our case example, the name of the organization is Harris Memorial Hospital and Harris Community Foundation. You may wonder what the relationship is between these two entities. The answer to this question can almost always be found in the beginning of the notes to the financial statements. The description of the entity from the notes follows:

> **Organization and Basis of Combination**
> Harris Memorial Hospital (the Hospital) and Harris Community Foundation (the Foundation) are a hospital and charitable foundation located in Jersey, Ohio. The Hospital and Foundation are exempt from federal income

taxes under Section 501(c)(3) of the Internal Revenue Code (IRC). The Hospital and Foundation are collectively referred to herein as the Foundation.

The Foundation owns and operates the Renee Center, which has 27 skilled nursing beds; Harris Assurance, Ltd. (Assurance), a for-profit, wholly owned insurance subsidiary; and Harris Properties (Condit Inn), a for-profit, wholly owned subsidiary. During 20X6, the Foundation formed the Harris Community Hospital Corporation (dba Harris Hospital) located in Oldstone, Ohio and the Harris Long Term Acute Care Hospital Corporation (dba Harris Continuing Care Hospital) located in Jersey, Ohio. The 60-bed Harris Continuing Care Hospital opened in May 20X7. Harris Hospital, with 92 beds, opened in late July 20X7. At December 31, 20X7, the Foundation has remaining commitments totaling approximately $7,360,000 under construction contracts for these and other capital projects.

The Foundation is affiliated with the Harris Health Plan (the Health Plan). The Health Plan's financial statements are not included in these combined financial statements. The Foundation provides healthcare services in the central Ohio region. All appropriate intercompany accounts have been eliminated in combination.

What we learn from this reading is that Harris Memorial Hospital and Harris Community Foundation are not-for-profit organizations that are effectively presented as one entity (referred throughout the remainder of the statements as the Foundation). This combined entity not only represents the hospital and charitable foundation, but also a host of other business interests: a skilled-nursing facility, an insurance firm, a real estate company that runs a hotel, and two other smaller hospitals. Some of these interests are for-profit even though the parent is not-for-profit (as understood by the tax-free status). The Foundation also has an affiliation with a health plan; however, the financial details of this relationship are not provided.

The Harris Foundation (HCF) presents a great example for our discussion of modern healthcare organizations (HCOs). Clearly, HCOs can be complex entities that represent a variety of business interests. As such, prior to reviewing the four core financial statements, it is imperative to understand who and what those statements are representing.

Learning Objective 2

Understand the format and content of the balance sheet.

Balance Sheet

As discussed previously, the balance sheet presents a record of an organization's assets, liabilities, and net assets (equity) at a specific point of time. You will recall these terms from the previous chapter. Assets are things that an organization owns (e.g., buildings, equipment, and cash). Liabilities and net assets describe how the assets are financed. When an organization uses debt (loans, mortgages, etc.) to purchase an asset, this is referred to as a liability. The owner is liable to someone else for the funds used to purchase the asset. Net assets or fund balance, also known as equity, refer to the remaining interest the owner(s) has after the liabilities have been paid. Recalling the duality principle, a balance sheet will always balance: assets = liabilities + net assets (equity). The balance sheet will always show this relationship for one point in time, typically the end of the accounting period.

In our case example, the accounting period for HCF is 1 year ending on December 31. Most audited financial statements present 2 years of information for comparison purposes. Examining the balance sheet for HCF we confirm that assets of $1,305,046 equal the sum of liabilities ($620,427) and net assets ($684,619). Note that the values have been listed "in thousands"; this is a common practice in audited financial statements.

Although it is nice to see that the balance sheet balances (as, of course, it should), it is more interesting to learn about the types of assets, liabilities, and net assets the entity possesses. The following paragraphs will explore these areas that are applicable in most audited financial statements.

Current Assets

Assets that are expected to be exchanged for cash or consumed during the operating cycle of the entity (or 1 year, whichever is longer) are classified as **current assets** on the balance sheet. The operating cycle is the length of time between acquisition of materials and services and collection of revenue generated by them. Because the operating cycle for most HCOs is significantly less than 1 year (perhaps 3 months or less), current assets are predominantly those that may be expected to be converted into cash or used to reduce expenditures of cash within 1 year.

Cash and Cash Equivalents

Cash consists of coin, currency, and available deposited funds at banks. Negotiable instruments such as money orders, certified checks, cashier's checks, personal checks, or bank drafts are also viewed as cash. **Cash equivalents** include savings accounts, certificates of deposit, and other temporary marketable securities. Categorization as a cash equivalent requires that two criteria be met. First, management must intend to convert the investment into cash within 1 year or during the operating cycle, whichever is longer. Second, the investment must be readily marketable and capable of being transformed into cash easily. HCF had $82,815,000 in cash and cash equivalents in 20X7, which was an increase over the prior year. In a subsequent chapter we will discuss if HCF's cash position is appropriate.

Accounts Receivable

Accounts receivable represent legally enforceable claims on customers for prior services or goods. HCF has net patient accounts receivable of $70,025,000 at the end of 20X7. This value represents the amount of money that HCF expects to collect in the next year (20X8) from services provided to patients and other customers in 20X7 that as yet have not been paid. HCF also has nonpatient accounts receivable in the amount of $28,990,000 at the end of 20X7.

A characteristic of hospitals and other HCOs that makes their accounts receivable different from those of most other organizations is that the charges actually billed to patients are often settled for substantially lower amounts. The differences are known as allowances. The following four major categories of allowances are used to restate accounts receivable to expected, realizable value:

1. Charity allowances
2. Courtesy allowances
3. Doubtful account allowances
4. Contractual allowances

A **charity allowance** is the difference between established service rates and amounts actually charged to indigent patients. Most healthcare facilities have a policy of scaling the normal charge by some factor based on income in relationship to a standard, usually the Federal Poverty Level values. The difference between the initial price and the discounted price is the amount of the charity allowance. A **courtesy allowance** is the difference between established rates for services and rates billed to special patients, such as employees, physicians, and clergy. Again, the difference between initial price and discounted price for these special patients represent the courtesy allowance.

A **doubtful account allowance** is the difference between rates billed and amounts expected to be recovered. For example, a medically indigent patient might actually receive services that have an established rate of $100, but be billed only $50. If it is anticipated that the patient will not pay even the $50, then that $50 will show up as a doubtful account allowance. HCF had a doubtful account allowance of $25,302,000 for its accounts receivable in 20X7. This means that the organization had uncollected net patient charges of $95,327,000 ($70,025,000 + $25,302,000) but only expected to collect $70,025,000 (the amount listed in accounts receivable for 20X7).

In most situations, **contractual allowances** represent the largest deduction from accounts receivable. A contractual allowance is the difference between rates billed to a third-party payer, such as Medicare, and the amount that actually will be paid by that third-party payer. For example, a Medicare patient may receive hospital services priced at $4,000 but actually pay the hospital only $3,000 for those services, based on a prearranged agreement between the payer and the hospital. If this account is unpaid at the fiscal year end, the financial statements would include the net amount of cash expected to be received ($3,000), not the gross prices charged ($4,000). Accounts receivable represent the amount of cash expected to be received, not the gross prices charged. Because most major payers, such as Medicare, Medicaid, and Blue Cross, have a contractual relationship that permits payment on a basis other than charges, contractual allowances can be, and usually are, very large.

The allowances are estimates and will, in all probability, differ from the actual value of accounts receivable that eventually will be written off. Because estimation of allowances is so critical to the reported value of accounts receivable, the methodology should be scrutinized. Just how was the estimate developed? Has the estimating method been used in the past with any degree of reliability? An external audit performed by an independent certified public accountant can usually provide the required degree of reliability and assurance.

Inventories and Supplies

Inventories in a healthcare facility represent items that are to be used in the delivery of healthcare services. They may range from normal business office supplies to highly specialized chemicals used in a laboratory.

Prepaid Expenses

Prepaid expenses represent expenditures already made for future service. Although these do not appear in the HCF balance sheet, they may represent prepayment of insurance premiums for the year, rents on leased equipment, or other similar items. For example, an insurance premium for a professional liability insurance policy may be $600,000 per year, due 1 year in advance. If this amount were paid on January 1, then on June 30, $300,000 (one-half of the total) would be shown as a prepaid expense.

Plant, Property, and Equipment (PPE)

Property and equipment are sometimes called **fixed assets** or shown more descriptively as **plant, property, and equipment**. Items in this category represent investment in tangible, permanent assets; they are sometimes referred to as the capital assets of the organization. These items are shown at the historical cost or acquisition cost, reduced by allowances for depreciation. Details regarding the elements of fixed assets are often shown in the footnotes. Footnote number 3 in Appendix 9-A provides this detail for HCF.

Land and Improvements

Land and improvements represent the historical cost of land owned by the healthcare facility and the historical cost of any improvements erected on it. Such improvements might include water and sewer systems, roadways, fences, sidewalks, shrubbery, and parking lots. Although land may not be depreciated, land improvements may be depreciated. Land held for investment purposes is not shown in this category but appears as an investment in the other assets section.

Buildings and Equipment

Buildings and equipment represent all buildings and equipment owned by the entity and used during the normal course of its operations. These items are also stated at historical cost. Buildings and equipment not used in the normal course of operations should be reported separately. For example, real estate investments would not be shown in the fixed asset or plant property and equipment section but in the other assets section. Equipment in many situations is classified into three categories: (1) fixed equipment—affixed to the building in which it is located, including items such as elevators, boilers, and generators; (2) major movable equipment—usually stationary but capable of being moved, including reasonably expensive items such as automobiles, laboratory equipment, and X-ray apparatuses; and (3) minor equipment—usually low in cost with short estimated useful lives, including such items as wastebaskets, glassware, and sheets.

Construction in Progress

Construction in progress represents the amount of money that has been expended on projects that are still not complete when the financial statement is published.

Allowance for Depreciation

Allowance for depreciation represents the **accumulated depreciation** taken on the asset to the date of the financial statement. The concept of depreciation is important and useful regarding a wide variety of decisions. **TABLE 9-1** illustrates the depreciation concept: A $500 desk is purchased and depreciated over a 5-year life.

In the case of HCF, there is $493,814,000 of accumulated depreciation as of December 31, 20X7 (this value is found in Appendix 9-A under footnote 3, Property and Equipment). The historical cost base for this amount is $1,057,163,000, the historical cost value of buildings and equipment. This means that 46.7% of the historical cost of present facilities has been depreciated in prior years. As the ratio of allowance for depreciation to building and equipment increases, it usually signifies that a physical plant will need to be replaced in the near future.

Assets That Have Limited Use

Most organizations will have some amounts listed under **assets that have limited use**. Often these assets are cash and investments that can only be spent for specific purposes. At the end of 20X7,

TABLE 9-1 Balance Sheet Values

	Year				
	1	2	3	4	5
Historical equipment cost	$500	$500	$500	$500	$500
Allowance for depreciation	100	200	300	400	500
Net	$400	$300	$200	$100	$0

HCF had $512,986,000 in limited funds. The nature of the asset limitation usually derives from one of two possibilities. First, the board of directors for the organization may restrict certain funds to be used only in designated ways. HCF had $382,835,000 in board-designated funds at the end of 20X7 (see Appendix 9-A, footnote 8). At times, no additional detail is provided for what areas the board is restricting funds. However, the HCF audit has further breakout of these funds in the notes section under Assets Limited as to Use (Appendix 9-A, footnote 8). The section details funded depreciation (to replace aging physical assets), professional liabilities, institutional research, subsidiary investments, and other board-designated purposes as the primary fund areas. In sum, board-designated funds must receive approval from the board prior to being expended.

Second, aside from a board restriction, a third party also may restrict funds. Two major types of third-party restrictions are seen in the HCF audit: donor-restricted and trustee restrictions for bond agreements. Donor-restricted funds are typically tied to a specific building campaign or community service function. Bond-restricted funds are primarily held to assure investors that sufficient money is available to repay the bond commitment.

Other Assets

Finally, **other assets** are those that are neither current nor involve property and equipment. Typically, they are either investments or intangible assets. Several categories exist. For example, deferred financing costs are listed in the other asset area. Deferred financing costs are costs incurred initially by a borrower to issue bonds. Such costs include legal fees, accounting fees, and underwriter's costs. The costs are amortized over the life of the bonds, much like depreciation.

Two other intangible asset items that may be included in some healthcare facility balance sheets are goodwill and organization costs. Goodwill represents the difference between the price paid to acquire another entity and the fair market value of the acquired entity's assets, less any related obligations or liabilities. Goodwill is included mainly in balance sheets of proprietary facilities, although increasingly, it is also being seen in balance sheets of voluntary not-for-profit organizations as they acquire other healthcare entities, especially physician practices. Organization costs are expended for legal and accounting fees and other items incurred at the formation of the entity. The cost of these items is usually amortized over some allowable life.

Current Liabilities

Current liabilities are obligations that are expected to require payment in cash during the coming year or operating cycle, whichever is longer. Like current assets, they are generally expected to be paid in 1 year.

Accounts Payable

Accounts payable may be thought of as the counterpart of accounts receivable. They represent the entity's promise to pay money for goods or services it has received.

Accrued Liabilities

Accrued liabilities are obligations that result from prior operations. They are thus a legal obligation to make future payment. The expense of accruing interest is an example. (This is discussed further in Chapter 8.) Other examples of accrued expenses are payroll, vacation pay, tax deductions, rent, and insurance. In some cases, especially payroll, accrued liabilities are desegregated to show material categories.

Due to Third-Party Payers

Similar to accounts receivable on the asset side of the balance sheet, amounts listed under **due to third-party payers** represent money that is due an intermediary payer (Medicare, Blue Cross, etc.) from the organization that is, as yet, unpaid. HCF has a relatively small current liability for this area. The values for both due to and from third-party payers usually reflect differences between interim payments for medical services in the preceding year and estimated final payments. For example, a large payer such as Blue Cross may agree to make biweekly payments of $1,000,000 for services to its beneficiaries. At year-end, a final accounting will be made to determine the actual amounts that should have been paid based on actual utilization and cost. In the case of HCF, a large balance ($7,380,000) is due to the payers, which may be offset against future payments from the payer.

Current Portion of Long-Term Debt

Current portion (or maturities) of long-term debt represents the amount of principal that will be repaid on the indebtedness within the coming year. It does not equal the total amount of the payments that will be made during that year. Total payments include both interest and principal; current portion of long-term debt includes just the principal portion. For example, if at the June 30 fiscal year close, a total of $360,000 ($30,000 per month) will be paid on

long-term indebtedness during the coming year and of this amount, only $120,000 is principal payment, then $120,000 would be shown as a current portion of the long-term debt.

Noncurrent Liabilities

Noncurrent liabilities include obligations that will not require payment in cash for at least 1 year or more. Harris Community Foundation shows five types of noncurrent liabilities: contingent professional liabilities; due to broker; postretirement obligation, other than pensions; long-term debt; and other liabilities. Often, these areas can be described further in the notes to the financial statements. The largest area by far for HCF is long-term debt.

Long-Term Debt

Long-term debt represents the amount of long-term indebtedness that is not due in the next year. HCF reported $439,597,000 in 20X7. When the current portion of long-term debt ($4,692,000) is added to the long-term portion, the total amount of long-term debt is determined. The notes to the financial statements usually provide additional information on maturities, interest rates, and types of outstanding debt (Appendix 9-A, footnote 4).

Net Assets

Net assets (or equity), as discussed earlier, represent the difference between assets and the claim to those assets by third parties or liabilities. It is helpful to remember that assets and liabilities are more "material" in nature. Cash, buildings, and loans (examples of assets and a liability) are physical things that are easier to understand for most people. The concept of equity is perhaps, less clear because it is the result of a mathematical equation and is not truly material or physical in nature. Essentially, equity represents the net worth of an entity after all liabilities have been paid. Let us use an illustration to make this point more clear. Assume two individuals own homes each with a $200,000 value. The first individual has $150,000 remaining on his loan, while the second individual only has $30,000 left on her loan. Assuming no other assets or liabilities, the second individual would obviously have the greater net worth (or equity position) at $170,000 versus the first individual with only $50,000 in equity. Increasing equity is a primary financial goal for individuals and organizations. This will be discussed in more detail in Chapter 11.

We know from our discussion on limited use assets that there are restrictions placed on certain asset areas. As a result, net assets are typically categorized into one of three types: (1) unrestricted, (2) temporarily restricted, and (3) permanently restricted. (See further discussion in Chapter 8.) This is represented in the net asset categorization for HCF, as well. Unrestricted net assets are by far the largest of the three types for HCF ($600,179,000 of the total $684,619,000).

Increases in net assets usually arise from one of two sources: (1) contributions or (2) earnings. In the nonprofit healthcare industry, there is usually no separation in the fund balance account (net assets or equity) to recognize these two sources. Thus, there is no indication of how much of HCF's unrestricted net assets of $600,179,000 were earned and how much were contributed. Financial statements prepared for proprietary entities do show this breakdown. Earnings of prior years, reduced by dividend payments to stockholders, are shown in an account labeled "retained earnings." In any given year, however, it is possible to determine the sources of change in unrestricted net assets by examining the statement of changes in net assets, as will be discussed.

Learning Objective 3

Understand the format and content of the statement of operations.

Statement of Operations (Revenues and Expenses)

Previously defined, the statement of operations (also known as the income statement or statement of revenues and expenses) details the organization's revenues and expenses during the accounting period—typically, 1 year. The statement of operations has become increasingly important in both the proprietary and nonproprietary sectors. It represents operations in a given period better than a balance sheet does. A balance sheet summarizes the wealth position of an entity at a given point by delineating its assets, liabilities, and net assets. An income statement provides information concerning how that wealth position was changed through operations.

An entity's ability to earn an excess of revenue over expenses (also commonly referred to as net income or profit) is an important variable in many external and internal decisions. A series of income statements indicates this ability well. Creditors use income statements to determine the entity's ability to pay future and present debts; management and rate-regulating agencies

use them to assess whether current and proposed rate structures are adequate.

The entity principle is an important factor in analyzing and interpreting the statement of revenue and expense. **Income**, the excess of revenue over expenses, comes from a large number of individual operations within a healthcare entity and is aggregated in the statement of revenues and expenses. For example, HCF has aggregated the revenues and expenses from its subsidiaries to create a consolidated statement of revenues and expenses. Individuals interested in details about any of the individual entities that constitute HCF would need to see income statements for those organizations. Information about revenues and expenses by product line also often are needed when making managerial decisions. Here, however, our focus is on the general-purpose statement of revenues and expenses, which is an aggregate of individual product lines.

Revenue

Generally speaking, revenue in a healthcare facility comes from three sources:

1. Patient services revenue
2. Other revenue
3. Nonoperating gains (losses)

Patient Services Revenue

Patient services revenue represents the amount of revenue that results from the provision of healthcare services to patients. It is often shown on a net basis in the statement of revenues and expenses with additional detail in the footnotes. **Net patient revenue** is the residual of **gross patient revenue** less allowances. Gross revenue is the "list price" for services provided to the patient. However, most third-party payers or uninsured individuals do not pay list price for services. Instead, the hospital discounts the services to a lesser price for major payers (Medicare, Blue Cross, etc.) and to individuals who meet certain income standards described in the hospital's charity care policy. The hospital may also choose to grant discounts to other individuals or parties, as well, based on established criteria. The discount, or allowance, is subtracted from the gross price to arrive at the amount the hospital expects to collect from the payer or individual. HCF reported net patient services revenue of $829,005,000 in fiscal year 20X7. This value is the amount that HCF expects to collect from the patient services it has provided.

Bad-debt (doubtful account) provisions recognize the amount of charges that will not be collected from patients from whom payment was expected. It should be emphasized that bad debts are different from charity care. Bad debts are incurred on patients for whom services were provided and payment *was* expected, but no payment was forthcoming. For example, if a patient had commercial insurance coverage that paid 80% of the patient's bill of $10,000 and required the patient to pay the residual balance, the hospital would bill the patient for $2,000. If the patient refused to pay the $2,000 and no payment was expected, the $2,000 charge would be written off as a bad debt. Bad debts are reported as a deduction from net patient services revenue. As shown in the statement of operations, HCF had $55,851,000 of bad debt in 20X7. This value represents the amount of net payment due to the hospital that has been determined to be uncollectable. Accounting for this amount of bad debt leaves HCF with $773,154 in net patient service revenue.

The value that is reported for net patient service revenue is part fact and part estimate. At the close of the fiscal year, someone must estimate what amounts actually will be paid by third-party payers under existing contracts. This is not an easy task in most situations, and there is likely to be some error. This is important to recognize when revenue figures are examined for periods shorter than 1 year (for example, monthly) and when those statements are not audited by an independent auditor. This does not mean that the data are not valid, only that some caution should be exercised in using them.

Other Revenue

Other revenue is generated from normal day-to-day operations not directly related to patient care. Harris Community Foundation reports $27,055,000 of other revenue for 20X7. There is no indication regarding the source of this revenue in the financial statements, but the usual sources include revenue from the following:

- Educational programs
- Research and grants
- Rentals of space or equipment
- Sales of medical and pharmacy items to nonpatients
- Cafeteria sales
- Gift shop sales
- Parking lot sales
- Investment income on borrowed funds held by a trustee
- Investment income on malpractice trust funds

It is not entirely clear in all cases whether an item should be categorized as other revenue or as nonoperating gain or loss. The general rule is that items are categorized as nonoperating gains or losses when they are peripheral or incidental to the activities of the healthcare provider. For example, donations could be

classified as a gain to some organizations and as other revenue to other organizations.

Nonoperating Gains (Losses)

Nonoperating gains and losses result from peripheral or incidental transactions. The definitions of peripheral and incidental transactions are not exactly clear, and the terms could be treated inconsistently. For example, HCF reports $30,453,000 of investment income in 20X7. Most likely, these earnings resulted from funds restricted by the board for internally designated purposes. Is the investment of funded depreciation or capital replacement reserves incidental to HCF? HCF must believe that it is, but another organization with exactly the same situation might choose to categorize it differently.

In general, the following items are often categorized as nonoperating gains or losses:

- Contributions or donations that are unrestricted income from endowments
- Income from the investment of unrestricted funds
- Gains or losses on sale of property
- Net rentals of facilities not used in the operation of the facility

Operating Expenses

In these days of increasing concern regarding healthcare costs, decision makers are paying more attention to healthcare facilities' operating expenses. Generally speaking, there are two ways that expenses may be categorized: (1) by cost or responsibility center or (2) by object or type of expenditure.

In most general-purpose financial statements, costs are reported by cost object. HCF breaks down expenses into the following categories:

- Salaries and wages
- Employee benefits
- Supplies and purchased services
- Advertising
- Staff enrichment
- Occupancy cost
- Depreciation and amortization
- Interest

Many of the expense areas are easily understood. **Salaries and wages** represent the amount paid to staff (either salaried or hourly workers). **Employee benefits** represent amounts for employee benefits and tax payments. Among items included are social security, unemployment tax, workers' compensation, retirement costs, health insurance, and other fringe-benefit programs.

Other items, such as staff enrichment, may not be as easily understood. There is no further detail in the notes to the financial statements that elaborate on the content of this expense area.

Depreciation and **interest** are two special accounts that have great importance in financial analysis. They are both discussed in Chapter 10. In general, depreciation is a noncash expense that represents the financial value that an asset loses over some period of time (usually defined by the asset's useful life). Interest is the expense paid as part of debt financing.

Accumulated depreciation on the balance sheet and depreciation expense on the income statement are related, but are not the same. Depreciation expense is the amount depreciated for the accounting period (usually 1 year) while accumulated depreciation on the balance sheet represents the sum of these expenses for prior periods.

Finally, it should be noted that **expense** and **expenditure** (or payment of cash) may not be equivalent in any given period. For example, a healthcare facility may incur an expenditure of $1,000,000 to buy a piece of equipment but may charge only $200,000 as depreciation expense in a given year. In general, expenditure reflects the payment of cash, whereas expense recognizes prior expenditure that has produced revenue. The following three major categories of expenditures usually are not treated as expenses:

1. Retirement or repayment of debt
2. Investment in new fixed assets
3. Increases in working capital or current assets

One major category of expense—depreciation of fixed assets—does not involve a cash expenditure. In addition, other normal accruals, such as vacation and sick leave benefits, may be recognized as expense but involve no immediate cash outlay.

Learning Objective 4

Understand the format and content of the statement of changes in net assets.

Statement of Changes in Net Assets

The statement of changes in net assets (or statement of changes in shareholders' equity in for-profit settings) merely accounts for the changes in net assets (or equity) during the year. HCF's financial statement shows that the majority of the change in unrestricted net assets is

attributed to excess of revenues over expenses, or net income. HCF does, however, show sizable values for contributions, gifts, and bequests. Donations are typically included in the statement of changes in net assets as opposed to the statement of operations because of established accounting reporting standards. This is primarily the result of the restrictions placed on most donations and the delayed ability to use the donated funds.

Another major area for changes in net assets is changes in net unrealized gains and losses on other than trading securities. These changes represent valuation adjustments for nontrading securities, usually equity investments, with objective market values, such as publicly traded values. When the securities are finally sold, the difference between the sales price and acquisition cost will be recognized as a realizable gain.

Some HCOs will consolidate the statements of operations and changes in net assets into one financial statement. The driving factor for this is that there is often little activity beyond net income that changes net assets for a nonprofit healthcare provider. This serves as a powerful reminder that the primary method that a nonprofit healthcare provider employs to grow net assets is through net income performance. Whereas for-profit providers can generate additional equity through shareholder investments, a nonprofit provider must impact this important financial element through its operating and nonoperating gains. This point will be emphasized in Chapter 11, where we will discuss the primary long-term financial objective for organizations.

Learning Objective 5

Understand the format and content of the statement of cash flows.

Statement of Cash Flows

The statement of cash flows is designed to give additional information on the flow of funds within an entity. As we have noted, the concept of expense does not necessarily give decision makers information on funds flow. The statement of cash flows is designed to give information on the flow of funds within an entity, and to summarize the sources that make funds available and the uses for those funds during a given period.

In general, there are three activities that generate or use cash flows for an organization: (1) operating activities, (2) investing activities, and (3) financing activities. HCF derived $59,885,000 of cash flow from operating activities during 20X7. It then spent $142,793,000 on investments, primarily property, and equipment. It also generated $106,027,000 for **financing activities** during 20X7. The difference is the net increase in cash and cash equivalents during the year, or $23,119,000. A statement of cash flows can be thought of simply as a statement that explains the sources for changes in the cash accounts during the year.

The amount of cash flow generated from operating activities can be thought of as the amount of excess of revenues over expenses subject to several adjustments, the first of which is for expenses that did not involve an actual outlay of cash. The biggest items here are depreciation and provision for bad debts. **Provision for bad debts** is added back because the expense did not involve an outlay of cash, merely a write-off of a receivable.

SUMMARY

In this chapter, we have discussed the contents of the following four general-purpose financial statements:

1. Balance sheet
2. Statement of revenues and expenses
3. Statement of cash flows
4. Statement of changes in unrestricted net assets

Primary attention was directed at the first two, balance sheet and statement of revenues and expenses, which provide a basis for most financial information.

This chapter focused on understanding the basic information available in these four financial statements. Later chapters describe how this information can be interpreted and used in actual decision making.

ASSIGNMENTS

1. Consider a hospital that is introducing a new service anticipated to have 1,000 patient visits per year at an average cost of $2,200 and average billed charges of $4,500. Determine the amount of gross revenue, contractual deductions, net patient revenue, and net operating income that would result given the payer mix and terms shown in **TABLE 9-2**.

TABLE 9-2

Payer Class	Number of Patients	Payment per Case
Medicare	400	$2,050 per case
Medicaid	150	$1,650 per case
Payers with a hospital contract	280	$3,000 per case
Payers without a hospital contract	100	90% of gross (billed) charges
Self-pay patients	50	5% of gross (billed) charges
Charity care patients	20	$0 per case
	1,000	

2. How could you determine the amount of debt principal that will be retired during the next year through an examination of the financial statements for HCF?
3. What are the titles of the four financial statements that are usually included in an audited financial report?
4. Shady Rest nursing home has just acquired a home health firm for $850,000 in cash. The balance sheet of the home health firm looked as follows just before the acquisition:

Current assets	$200,000
Net fixed assets	100,000
Total	$300,000
Current liabilities	$100,000
Shareholder's equity	200,000
Total	$300,000

   Assume that the fair market value of the net fixed assets is $300,000 and fair market value of current assets is $200,000. Describe how this acquisition might be reflected on the balance sheet of Shady Rest.
5. Describe several items that are treated as expenses in the income statement but do not require any expenditure of cash in the present period.
6. A major medical supplier has donated $45,000 worth of medical supply items to your firm. These items are then used in the treatment of patients. Explain how this transaction would be recorded in your firm's financial statements.
7. Your HMO is experiencing a critical shortage of funds. Using the statement of cash flows as a framework for discussion, explain how you might attempt to reduce the need for additional funds.
8. Your hospital has experienced negative levels of net income for the last 5 years. The total amount of accumulated deficits is $5 million, but you have noticed that unrestricted net assets have increased $2 million during the same period. How might this situation be explained?
9. You have been reading the footnotes to your hospital's financial statements and were surprised to see that the actuarial present value of accumulated pension plan benefits is $4,500,000. A footnote cites a fund of $8,500,000 that has been established to pay these benefits. However, you can find no mention of either the liability or the fund in the balance sheet. What might explain this situation?

SOLUTIONS AND ANSWERS

1. The calculations to determine the hospital's net operating income are shown in **TABLE 9-3**.

TABLE 9-3

Payer Class	Number of Patients	Payment per Case	Gross Revenue	Contractual Deductions	Net Patient Revenue	Total Costs	Net Operating Income
Medicare	400	2,050	1,800,000	(980,000)	820,000	880,000	(60,000)
Medicaid	150	1,650	675,000	(427,500)	247,500	330,000	(82,500)
Payers with a hospital contract	280	3,000	1,260,000	(420,000)	840,000	616,000	224,000
Payers without a hospital contract	100	4,050	450,000	(45,000)	405,000	220,000	185,000
Self-pay patients	50	250	225,000	(212,500)	12,500	110,000	(97,500)
Charity care patients	20	—	90,000	(90,000)	—	44,000	(44,000)
	1,000		4,500,000	(2,175,000)	2,325,000	2,200,000	125,000

2. The value reported for current maturities of long-term debt in the balance sheet should represent the value of debt principal that will be retired during the next fiscal year. For HCF that value is $4,692,000.
3. The four financial statements are the balance sheet, the statement of revenues and expenses or statements of operations, the statement of cash flows, and the statement of changes in unrestricted net assets.
4. First, fair market value of the assets acquired by Shady Rest would be determined. In this example, we will assume that the current asset value would not change, but that the fixed assets would be restated to $300,000 at fair market value. Shady Rest is thus acquiring total assets worth $500,000 and assuming liabilities of $100,000 for a net book value of $400,000. Because Shady Rest is paying $850,000 for these assets, there would be a goodwill account of $450,000 created for the residual. The following account changes would occur:
   - Cash—decrease of $850,000
   - Current assets—increase of $200,000
   - Net fixed assets—increase of $300,000
   - Goodwill—increase of $450,000
   - Current liabilities—increase of $100,000

   The goodwill value would be charged to expense in future periods.
5. Pension expense would not require an actual expenditure of cash at the present time, although a payment may be made to a trustee for investment. Other accruals, such as vacation benefits, sick leave benefits, and FICA (Federal Insurance Contributions Act) accruals, may not require immediate cash expenditures.
6. The fair market value of the items donated would be treated as other revenue. In this case, if $45,000 is the fair market value, that amount would be shown as other revenue.

7. Major categories of fund usage in the statement of cash flows are the following:
   - Repayment of debt
   - Purchase of fixed assets
   - Increase in working-capital items, such as accounts receivable

   Conservation of funds could occur in any one of these three areas. For example, the HMO could postpone or delay new fixed asset acquisitions. It also could try to restructure its debt, especially in situations when a large proportion of the debt is short term. Finally, it could attempt to reduce the amount of funds necessary for working capital increases. This could be accomplished through a reduction in the HMO's receivable cycle or through an increase in its payable cycle.
8. In this example, the hospital has increased its total equity by $7 million through sources other than income. The most likely sources of these funds are transfers from restricted net assets, such as from plant replacement, or from direct equity transfers from related parties, such as a holding company. It is important to note that the funds were not derived from unrestricted contributions. Unrestricted contributions would have been shown as revenue and thus included in the computation of excess of revenues over expenses. It is also possible that unrealized gains on other than trading securities could have taken place.
9. Pension funds in a defined benefit plan are often held by a trustee and are not shown on the firm's financial statements. This is most likely the situation here. It is important to periodically examine the relationship between the pension fund and the actuarial present value of the pension fund liability. Changes in actuarial assumptions—for example, in mortality, investment yield, or inflation rates—can have a dramatic influence over the size of the liability. The relevant information can be found in the footnotes to the financial statements.

Appendix 9-A

Case Example Audited Financial Statement

Combined Financial Statements

Harris Memorial Hospital and Harris Community Foundation

Years Ended December 31, 20X7 and 20X6

Report of Independent Auditors—Pennypacker & Vandelay, LLC

The Board of Trustees
Harris Memorial Hospital and
Harris Community Foundation

We have audited the accompanying combined balance sheets of Harris Memorial Hospital and Harris Community Foundation and subsidiaries (the Foundation) as of December 31, 20X7 and 20X6, and the related combined statements of operations, changes in net assets, and cash flows for the years then ended.

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making this risk assessment, we consider internal control relevant to the Foundation's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Foundation's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence

we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the combined financial position of Harris Memorial Hospital and Harris Community Foundation and subsidiaries at December 31, 20X7 and 20X6, and the combined changes in their net assets and their cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

TABLE 9A-1 Harris Memorial Hospital and Harris Community Foundation Combined Balance Sheets (in Thousands)

	December 31, 20X7	December 31, 20X6
Assets		
Current assets		
Cash and cash equivalents	**$82,815**	$59,696
Assets limited as to use, current portion	**5,327**	5,088
Accounts receivable		
Patients, less allowance for doubtful accounts ($25,302 in 20X7 and $23,014 in 20X6)	**70,025**	59,939
Other	**28,990**	24,995
Supplies	**7,078**	6,663
Total current assets	**194,235**	156,381
Assets limited as to use		
For donor-restricted purposes	**84,440**	67,826
Board designated for specific purposes	**382,835**	378,413
Held by trustees under bond agreements	**51,038**	25,937
	518,313	472,176
Less current portion	**5,327**	5,088
	512,986	467,088
Property and equipment, net	**563,349**	458,829
Other assets	**34,476**	34,302
Total assets	**$1,305,046**	$1,116,600
Liabilities and net assets		
Current liabilities		

Accounts payable	**$32,572**	$24,631
Accrued expenses and other liabilities	**58,878**	53,725
Due to third-party payers	**7,380**	12,633
Current maturities of long-term debt	**4,692**	5,908
Total current liabilities	**103,522**	96,897
Long-term debt, less current maturities	**439,597**	332,354
Contingent professional liabilities	**33,260**	48,487
Due to broker	**15,128**	19,608
Other liabilities	**20,713**	5,298
Postretirement benefit obligation, other than pensions	**8,207**	7,694
Total liabilities	**620,427**	510,338
Net assets		
Unrestricted	**600,179**	538,436
Temporarily restricted	**55,213**	40,393
Permanently restricted	**29,227**	27,433
Total net assets	**684,619**	606,262
Total liabilities and net assets	**$1,305,046**	$1,116,600

TABLE 9A-2 Harris Memorial Hospital and Harris Community Foundation Combined Statements of Operations (in Thousands)

	December 31, 20X7	December 31, 20X6
Operating revenues and other support		
Net patient service revenue	**$829,005**	$774,662
Provision for doubtful accounts	**(55,851)**	(57,975)
Net patient service revenue less provision for doubtful accounts	**773,154**	716,687
Other operating revenue	**27,055**	29,334
Total operating revenue	**800,209**	746,021

(continues)

TABLE 9A-2 Harris Memorial Hospital and Harris Community Foundation Combined Statements of Operations (in Thousands) *(continued)*		
Operating expenses		
Salaries and wages	**$371,449**	$329,668
Employee benefits	**81,532**	77,231
Supplies and purchased services	**228,244**	225,497
Advertising	**3,072**	2,376
Staff enrichment	**10,767**	8,591
Occupancy cost	**14,346**	13,442
Depreciation	**44,392**	41,627
Interest	**10,974**	6,145
Operating expenses	**764,776**	704,577
Excess of revenue over expenses	**35,433**	41,444
Nonoperating gains (losses)		
Contributions, gifts, and bequests	**3,189**	1,318
Net assets released from restrictions for research expenditures	**14,070**	14,474
Research, education, and other nonoperating expenses	**(22,980)**	(24,773)
Change in interest rate swap value and put agreements	**1,578**	9,397
Investment income	**30,453**	18,402
	26,310	18,818
Excess of revenues and gains over expenses and losses	**$61,743**	$60,262

TABLE 9A-3 Harris Memorial Hospital and Harris Community Foundation Combined Statements of Changes in Net Assets (in Thousands)		
	December 31, 20X7	**December 31, 20X6**
Unrestricted net assets		
Excess of revenues and gains over expenses and losses	**$61,743**	$60,262
Net assets released from restrictions for capital expenditures	**—**	119

Cumulative effect of change in accounting principle	—	(3,943)
Increase in unrestricted net assets	**61,743**	56,438
Temporarily restricted net assets		
Contributions, gifts, and bequests	**20,435**	15,512
Investment income	**8,455**	3,972
Net assets released from restrictions for research expenditures	**(14,070)**	(14,474)
Net assets released from restrictions for capital expenditures	—	(119)
Increase in temporarily restricted net assets	**14,820**	4,891
Permanently restricted net assets		
Contributions, gifts, and bequests	**1,794**	3,218
Increase in permanently restricted net assets	**1,794**	3,218
Net assets at beginning of year	**606,262**	541,715
Net assets at end of year	**$684,619**	$606,262

TABLE 9A-4 Harris Memorial Hospital and Harris Community Foundation Combined Statements of Cash Flows (in Thousands)

	December 31, 20X7	December 31, 20X6
Operating activities		
Increase in net assets	**$78,357**	$64,547
Adjustments to reconcile increase in net assets to net cash provided by operating activities		
Change in net unrealized gains and losses on investment securities	**(26,358)**	11,432
Cumulative effect of change in accounting principle	—	(3,943)
Depreciation	**44,392**	41,627
Gain on sale or disposal of assets, net	**(6,119)**	—
Provision for bad debts	**55,851**	57,975
Change in interest rate swap value and put agreements	**(1,578)**	(9,397)

(continues)

TABLE 9A-4 Harris Memorial Hospital and Harris Community Foundation Combined Statements of Cash Flows (in Thousands) *(continued)*

	December 31, 20X7	December 31, 20X6
Changes in operating assets and liabilities		
Assets limited as to use	**(19,779)**	(14,274)
Accounts receivable	**(65,937)**	(51,251)
Other assets	**(7,071)**	(43)
Supplies	**(415)**	840
Accounts payable	**7,941**	10,613
Accrued expenses and other liabilities	**20,568**	8,430
Due to third-party payers	**(5,253)**	(4,877)
Contingent professional liabilities	**(15,227)**	3,743
Postretirement benefit obligation, other than pensions	**513**	456
Net cash provided by operating activities	**59,885**	115,878
Investing activities		
Property and equipment acquired	**(142,793)**	(159,943)
Cash used in investing activities	**(142,793)**	(159,943)
Financing activities		
Repayment of long-term debt	**(177,294)**	(5,545)
Proceeds from borrowing	**283,321**	57,614
Net cash provided by financing activities	**106,027**	52,069
Net increase in cash and cash equivalents	**23,119**	8,004
Cash and cash equivalents at beginning of year	**59,696**	51,692
Cash and cash equivalents at end of year	**$82,815**	$59,696

Harris Memorial Hospital and Harris Community Foundation

Notes to Combined Financial Statements
December 31, 20X7

1. Organization and Significant Accounting Policies

Organization and Basis of Combination

Harris Memorial Hospital (the Hospital) and Harris Community Foundation (the Foundation) are a hospital and charitable foundation located in Jersey, Ohio. The Hospital and Foundation are exempt from federal income taxes under Section 501(c)(3) of the Internal Revenue Code (IRC). The Hospital and Foundation are collectively referred to herein as the Foundation.

The Foundation owns and operates the Renee Center, which has 27 skilled nursing beds; Harris Assurance, Ltd. (Assurance), a for-profit, wholly owned insurance subsidiary; and Harris Properties (Condit Inn), a for-profit, wholly owned subsidiary. During 20X6, the Foundation formed the Harris Community Hospital Corporation (dba Harris Hospital) located in Oldstone, Ohio and the Harris Long Term Acute Care Hospital Corporation (dba Harris Continuing Care Hospital) located in Jersey, Ohio. The 60-bed Harris Continuing Care Hospital opened in May 20X7. Harris Hospital, with 92 beds, opened in late July 20X7. At December 31, 20X7, the Foundation has remaining commitments totaling approximately $7,360,000 under construction contracts for these and other capital projects.

The Foundation is affiliated with the Harris Health Plan (the Health Plan). The Health Plan's financial statements are not included in these combined financial statements. The Foundation provides healthcare services in the central Ohio region. All appropriate intercompany accounts have been eliminated in combination.

Cash Equivalents

The Foundation considers all undesignated highly liquid investments with maturities of 3 months or less when purchased to be cash equivalents.

Supplies

Supplies are stated at cost (first-in, first-out method), which is not in excess of market value.

Patient Accounts Receivable

Patient accounts receivable are stated at estimated net realizable value. Significant concentrations of patient accounts receivable were 20% and 19% at December 31, 20X7 and 20X6, respectively, from government-related programs. Patient accounts receivable from the Health Plan were 25% and 29% at December 31, 20X7 and 20X6, respectively.

The Foundation maintains allowances for uncollectable accounts for estimated losses resulting from a payer's inability to make payments on accounts. The Foundation uses a balance sheet approach to value the allowance account based on historical write-offs, payer type, and the aging of the accounts. Accounts are written off when collection efforts have been exhausted. Management continually monitors and adjusts, as necessary, allowances associated with its receivables. The majority of uncollectable accounts are from uninsured and the patient portion of accounts receivable.

Assets Limited as to Use

Assets limited as to use at December 31, 20X7, include 76% and 9% held under master trust agreements with Liberty Eagle Trust and Highbanks, respectively, and 15% held in government-insured time deposits and other financial instruments. Assets limited as to use at December 31, 20X6, include 78% and 5% held under master trust agreements with Liberty Eagle Trust and Highbanks, respectively, and 17% held in government-insured time deposits and other financial instruments. The investments held under the master trust agreements are diversified among equity, debt, and money market instruments and are reported at estimated fair value. The fair value of these investments is generally based on quoted market prices on national exchanges.

Property and Equipment

Property and equipment are recorded at cost at the date of acquisition or estimated fair value at the date of donation. Depreciation is computed on the straight-line method using the estimated economic lives of the depreciable assets, generally ranging from 3 to 40 years. Expenditures that materially increase values, change capacities, or extend useful lives are capitalized. Routine maintenance and repair items are charged to operating expenses.

The Foundation evaluates whether events and circumstances have occurred that indicate the remaining estimated useful life of long-lived assets may warrant revision or that the remaining balance of an asset may not be recoverable. The assessment of possible impairment is based on

whether the carrying amount of the asset exceeds the expected total undiscounted value of cash flows expected to result from the use of the assets and their eventual disposition. No amounts were recognized in 20X6.

In 20X7, the Foundation recorded a charge of $4,000,000, net of reimbursement, for unrecoverable costs incurred in connection with repair and maintenance costs of the Condit Inn.

Derivative Financial Instruments

The Foundation accounts for its derivatives under Statement of Financial Accounting Standards No. 133, *Accounting for Derivative Instruments and Hedging Activities,* or SFAS No. 133. SFAS No. 133 requires that all derivative financial instruments that qualify for hedge accounting be recognized in the financial statements and measured at fair value regardless of the purpose or intent for holding them. Changes in the fair value of derivative financial instruments are recognized periodically either in operations or in changes in unrestricted net assets. The Foundation's policy is to not hold or issue derivatives for trading purposes and to avoid derivatives with leverage features.

Restricted Support

The Foundation records unconditional promises of cash or other assets at estimated fair value on the date the promises are received. The Foundation reports gifts of cash and other assets as restricted support if they are received with donor stipulations that limit the use of the donated assets. When a donor restriction expires, that is, when a stipulated time restriction ends or a purpose of restriction is accomplished, temporarily restricted net assets are reclassified to unrestricted net assets and reported in the combined statements of operations or combined statements of changes in net assets (based on nature of restriction) as net assets released from restrictions.

The Foundation reports gifts of land, buildings, and equipment as unrestricted support unless explicit donor stipulations specify how the donated assets must be used. Gifts of long-lived assets with explicit restrictions that specify how the assets are to be used and gifts of cash or other assets that must be used to acquire long-lived assets are reported as restricted support. The Foundation reports expirations of donor restrictions when the donated or acquired long-lived assets are placed in service.

Permanently restricted net assets have been restricted by donors to be maintained by the Foundation in perpetuity. The income from permanently restricted net assets is recorded as unrestricted unless explicitly restricted by donors. Donor-restricted income on permanently restricted net assets is generally available to support research and education and is reported as temporarily restricted.

The Foundation's temporarily restricted net assets are restricted primarily for research, education, capital projects, and medical care programs and its permanently restricted net assets are primarily restricted for endowment purposes.

Net Patient Service Revenue

Net patient service revenue is reported at estimated net realizable amounts from patients, third-party payers, and others for services rendered and includes estimated retroactive revenue adjustments due to future audits, reviews, and investigations. Retroactive adjustments are considered in the recognition of revenue on an estimated basis in the period the related services are rendered, and such amounts are adjusted in future periods as adjustments become known or as years are no longer subject to such audits, reviews, and investigations.

Charity Care

The Foundation provides care without charge or at amounts less than its established rates to patients who meet certain criteria under its charity policy. Because the Foundation does not pursue collection of amounts determined to qualify as charity care, they are not reported as revenue. Hospital charges foregone for charity care, based on established rates, were approximately $35,200,000 in 20X7, prior to application of disproportionate share funds of approximately $4,800,000 received from the State of Ohio, and $35,300,000 in 20X6, prior to application of disproportionate share funds of approximately $5,800,000 received from the State of Ohio. Clinic charges forgone for charity care, based on established rates, were $12,525,000 and $10,216,000 in 20X7 and 20X6, respectively.

Health Insurance Program Reimbursement

Revenue from the Medicare and Medicaid programs accounted for approximately 45% and 8%, respectively, of the Foundation's net patient service revenue for the year ended December

31, 20X7, and 51% and 11%, respectively, for the year ended December 31, 20X6. Laws and regulations governing the Medicare and Medicaid programs are extremely complex and are subject to interpretation. Federal regulations require the submission of annual cost reports covering medical costs and expenses associated with services provided to program beneficiaries. Medicare and Medicaid cost report settlements are estimated in the period services are provided to beneficiaries. As a result, there is at least a reasonable possibility that recorded estimates will change by a material amount in the near term. The 20X7 and 20X6 net patient service revenue increased (decreased) approximately $10,340,000 and $(1,332,000), respectively, due to changes in allowances previously estimated as a result of the final settlements for years that are no longer subject to audits, reviews, and investigations. The Foundation believes that it is in compliance with all applicable laws and regulations and is not aware of any pending or threatened investigations involving allegations of potential wrongdoing.

Medicare cost reports filed by the Hospital for all years before 20X4 have been audited and settled as of December 31, 20X7. Medicare cost reports filed by the Clinic for all years before 20X0 have been audited and settled as of December 31, 20X7. Amounts due to the Medicare and Medicaid programs totaled approximately $7,380,000 and $12,633,000 at December 31, 20X7 and 20X6, respectively, and are included in due to third-party payers in the accompanying combined balance sheets.

Nonoperating Gains and Losses

Nonoperating gains and losses include unrestricted contributions, gifts and bequests, interest earnings on investments, net assets released from restrictions for research and education expenditures (net of contributions for such expenditures), change in interest rate swap value and put agreements, and other gains and losses unrelated to the Foundation's primary operations.

Excess of Revenues and Gains over Expenses and Losses

Included in excess of revenues and gains over expenses and losses in the accompanying combined statements of operations are all changes in unrestricted net assets other than net assets released from restrictions for capital expenditures, unrealized gains and losses on investments other than trading investment securities, and investment returns restricted by donors.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the combined financial statements and accompanying notes. Actual results could differ from those estimates.

Other

Certain reclassifications of donor trust liabilities, previously included in assets limited as to use, were made to the 20X6 combined financial statements to conform to the 20X7 presentation.

Additionally, in previous years, the Foundation's investment portfolio (see Note 7) was classified as other than trading. As such, unrealized gains and losses that were considered temporary were excluded from excess of revenues and gains over expenses and losses. During fiscal year 20X7, the Foundation determined that substantially all of its investment portfolio was more accurately classified as trading with unrealized gains and losses included in excess of revenues and gains over expenses and losses. Therefore, a reclassification was made in the accompanying 20X6 combined financial statements to reflect this change in classification. A net unrealized loss of approximately $9,183,000 was reclassified from change in net unrealized gains and losses on investment securities to investment income.

2. Contingent Professional Liabilities

The Foundation self-insures substantially all of its professional liability risk through its wholly owned insurance subsidiary. A commercial insurance policy is maintained to insure claims exceeding $7,000,000 individually or $35,000,000 in the aggregate in 20X7 on a claims-made basis. Contingent professional liabilities are recorded for incurred but not reported claims and reported claims based on estimates by independent actuaries. Management established a fund for the purpose of setting aside assets based on estimates made by independent actuaries, and these funds are reported in the combined balance sheets as assets limited as to use.

3. Property and Equipment

TABLE 9A-5 Property and Equipment and Related Accumulated Depreciation (in Thousands)

	December 31, 20X7	December 31, 20X6
Land and improvements	**$26,945**	$26,610
Buildings and improvements expenditures	**447,897**	265,965
Fixed and movable equipment	**469,441**	427,882
Construction-in-progress	**112,880**	189,807
	1,057,163	910,264
Less accumulated depreciation	**493,814**	451,435
	$563,349	$458,829

4. Long-Term Debt

In July 20X7, the Foundation issued the Series 20X7 LTACH Revenue Bonds totaling $15,700,000. The Series 20X7 LTACH Revenue Bonds are due July 20X2 with principal and interest payments due monthly. Interest accrues at 65% of LIBOR plus 100 basis points. Effective with the issuance of the bonds, the Foundation entered into a fixed rate swap agreement for the amount of the bonds by which the Foundation pays a fixed rate of interest of 4.55%. The change in fair value for the period ended December 31, 20X7 was not significant to the increase in net assets.

In November 20X6, the Foundation issued Series 20X6 Revenue Bonds with a par amount of $233,350,000. Proceeds were used to advance refund $31,280,000 of the Series 20X0A Revenue Bonds, current refund $58,410,000 of the Series 20X1 Revenue Bonds, and finance and/or refinance expansion projects. The Series 20X6 Bonds were issued as Auction Rate Securities and generally bear interest for successive 7-day auction periods at interest rates determined through Dutch auctions on the business day preceding the auction period. Any series or subseries of the Series 20X6 Revenue Bonds may be converted at the option of the Foundation, subject to certain restrictions, to bonds that bear interest in different rate periods, including daily, weekly, flexible, term, or fixed rate periods. The Series 20X6 Revenue Bonds contain certain restrictive covenants, including minimum levels of debt service coverage. Management believes the Foundation is in compliance with all covenants.

TABLE 9A-6 Long-Term Debt (in Thousands)

	December 31, 20X7	December 31, 20X6
Revenue bonds, LTACH Series 20X7; interest at 65% of LIBOR plus100 basis points (4.647% at December 31, 20X7); principal and interest payable monthly through July 20X2	**$15,679**	$—
Revenue bonds, Series 20X6A-1; interest accrues for successive 7-day auction periods at interest rates determined through Dutch auctions (3.800% at December 31, 20X7)	**42,375**	—
Revenue bonds, Series 20X6A-2; interest accrues for successive 7-day auction periods at interest rates determined through Dutch auctions (3.800% at December 31, 20X7)	**42,400**	—

Revenue bonds, Series 20X6B; interest accrues for successive 7-day auction periods at interest rates determined through Dutch auctions (3.850% at December 31, 20X7)	**56,550**	—
Revenue bonds, Series 20X6C; interest accrues for successive 7-day auction periods at interest rates determined through Dutch auctions (3.850% at December 31, 20X7)	**55,275**	—
Revenue bonds, Series 20X6D; interest accrues for successive 7-day auction periods at interest rates determined through Dutch auctions (3.900% at December 31, 20X7)	**36,750**	—
Revenue bonds, Series 20X1; interest accrues at a daily rate determined by the remarketing agent (3.960% at December 31, 20X7); interest and principal payable annually through 20X1 (principal payments began in 20X6)	**90,360**	151,800
Revenue bonds, Series 20X0A; interest at 5.375%; interest and principal payable annually through 20X9	**2,700**	35,230
Revenue bonds, Series 20X0B; interest accrues at a daily rate determined by the remarketing agent (3.960% at December 31, 20X7); interest and principal payable annually through 20X9	**83,200**	84,500
Line of credit	**19,000**	46,686
Interim construction loan	**—**	7,000
Other	**—**	13,046
	444,289	338,262
Less current maturities	**4,692**	5,908
	$439,597	$332,354

In January 20X6, the Foundation entered into a revolving line of credit with Bank of Central Ohio to fund interim construction costs and provide for liquidity and other short-term needs. In accordance with terms of the loan agreement, the total available for borrowing was decreased from $70,000,000 to $30,000,000 30 days following the issuance of the Series 20X6 Revenue Bonds. The total amount drawn as of December 31, 20X7 was $19,000,000. Interest is payable quarterly at a rate equal to the lesser of the maximum lawful rate or LIBOR plus 15 basis points (5.71% at December 31, 20X7). Amounts drawn are due in full June 25, 20X9.

The Foundation issued Series 20X1 Revenue Bonds with a par amount of $158,000,000 that were partially refunded in November 20X6. The net proceeds were used to fund expansion projects.

The Foundation issued Series 20X0A Revenue Bonds with a par amount of $42,025,000 that were partially refunded in November 20X6 and Series 20X0B Revenue Bonds with a par amount of $91,200,000. The majority of the proceeds from the Series 20X0A and Series 20X0B Revenue Bonds were used to refund the current Series 19X8 Revenue Bonds with an outstanding balance of $19,147,000 and a note payable with an outstanding par amount of $88,000,000.

The Series 20X0A and Series 20X0B Revenue Bonds and the Series 20X1 Revenue Bonds contain certain restrictive covenants, including minimum levels of debt service coverage. Management believes the Foundation is in compliance with all covenants.

The Series 20X0B Revenue Bonds and the Series 20X1 Revenue Bonds are variable rate bonds in a daily mode and can be tendered by holders upon demand. A remarketing agent selected by the Foundation determines the interest rates and remarkets both series of bonds. The Series 20X0B Revenue Bonds and the Series 20X1 Revenue Bonds are supported by Standby Bond Purchase Agreements (the Agreements) with liquidity providers pursuant to which the providers will purchase any bonds the remarketing agent is unable to market. The termination date of the two Agreements related to the Series 20X0B Revenue Bonds was December 6, 20X7. On October 18, 20X7, these Agreements were extended to December 4, 20X8. There are also two Agreements associated with the Series 20X1 Revenue Bonds. The termination date of the first Agreement related to the Series 20X1 Revenue Bonds was December 6, 20X7, and on October 18, 20X7, was extended to December 4, 20X8. The termination date of the second Agreement related to the Series 20X1 Revenue Bonds is December 15, 20X5, as extended in November 20X4. All Agreements include covenants that are customary in credit agreements of this nature. Repayment of bonds purchased under the Agreements is subject to a 5-year payout beginning July 20X6, if other liquidity facilities, as defined in the bond agreements, are not executed. The maturities of long-term debt, net of unamortized premium, as of December 31, 20X7, are shown below (in thousands):

20X8	$4,692
20X9	23,902
20X0	5,136
20X1	5,353
20X2	19,896
Thereafter	385,310
	$444,289

Total interest costs incurred during fiscal 20X7 and 20X6 were $16,779,140 and $9,339,000 respectively, including $5,805,140 and $3,194,000 of capitalized interest costs in 20X7 and 20X6, respectively. Interest paid during fiscal 20X7 and 20X6 was $16,937,249 and $9,084,500, respectively, net of amounts capitalized.

5. Concentrations of Credit Risk

Harris Memorial grants credit without collateral to its patients, most of whom are local residents and are insured under third-party payer agreements. The mix of receivables from patients and third-party payers was as follows:

TABLE 9A-7 Mix of Receivables

	December 31, 20X7	December 31, 20X6
Medicare	**21%**	19%
Medicaid	**2**	2
Major payer 1	**15**	15
Major payer 2	**11**	11
Major payer 3	**11**	13
Other third-party payers	**28**	28
Private pay	**12**	12
Total	**100%**	100%

6. Interest Rate Swap Agreements

Effective December 20X1, the Foundation entered into an interest rate swap agreement with an initial notional amount of $150,000,000. The interest rate swap agreement converts a notional amount of $150,000,000 of floating rate borrowings to fixed rate borrowings. The Foundation pays a fixed rate of interest (5.17%) and receives, from the counterparty, a variable rate of interest based on the SIFMA Municipal Swap Index (SIFMA Index) on the outstanding principal balance of the Series 20X1 Revenue Bonds until 2031. The Foundation has elected not to apply hedge accounting; therefore, the change in fair value is included in nonoperating (gains) losses. The fair value of the interest rate swap at December 31, 20X7 and 20X6, is a liability of approximately $9,498,000 and $16,530,000, respectively, and is included in due to broker in the accompanying

combined balance sheets. The change in the fair value of the interest rate swap is included in nonoperating gains (losses) and totaled approximately $(7,032,000) and $(6,885,000) for the years ended December 31, 20X7 and 20X6, respectively. The change in fair value for the year ended December 31, 20X7 includes the amendment fee paid to the counterparty of $7,037,000, realized as a part of the Series 20X1 Revenue Bond refunding.

Simultaneous with entering into the interest rate swap agreement, the Foundation also entered into a put agreement with the counterparty. The counterparty may exercise this put agreement if the daily weighted average of the SIFMA Index is greater than 7.00% for the 180-day period ending on the day the counterparty exercises the put option. Under this agreement, the Foundation pays a variable rate of interest, based on the SIFMA Index, on the outstanding principal balance of the proposed bonds until 2031. For this put agreement, the counterparty pays the Foundation an annual premium of 77.30 basis points on an initial notional amount of $150,000,000 over the term of the put agreement, for a net effective combined annual payment by the Foundation to the counterparty for the swap agreement and the put agreement of approximately 4.39%. The premium payment, however, will cease upon exercise of the put agreement. This put agreement, if exercised, will offset the cash flows of the interest rate swap agreement noted above. The fair value of the put agreement at December 31, 20X7 and 20X6, is an asset of $4,200,000 and $7,016,000, respectively, and has been included in other assets. The change in the fair value of $(2,816,000) and $(552,000) for the years ended December 31, 20X7 and 20X6, respectively, has been included in nonoperating gains (losses) since the put agreement is not a hedge and must be adjusted to fair value through the performance indicator. A portion of the change in fair value for the year ended December 31, 20X7 includes the amount related to the partial refunding of the Series 20X1 Revenue Bonds. The amendment fee received from the counterparty was $2,005,000.

On October 30, 20X2, the Foundation entered into an interest rate swap agreement with an initial notional amount of $96,400,000 ($88,400,000 Series 20X0A and Series 20X0B and $8,000,000 Series 20X1). The interest rate swap agreement converts a notional amount of $96,400,000 of floating rate borrowings to fixed rate borrowings. The Foundation pays a fixed rate of interest (4.34)% and receives, from the counterparty, a variable rate of interest based on the SIFMA Index on the outstanding principal balance of the Revenue Bonds until 2031. The Foundation has elected not to apply hedge accounting; therefore, the change in fair value is included in nonoperating (gains) losses. The fair value of the interest rate swap at December 31, 20X7 and 20X6, is a liability of approximately $3,020,000 and $3,078,000, respectively, and is included in due to broker in the accompanying combined balance sheets. The change in the fair value of the interest rate swap is included in nonoperating gains (losses) and totaled approximately $(58,000) and $(3,639,000) for the years ended December 31, 20X7 and 20X6, respectively. The change in fair value includes the amendment fee of $176,000 paid to the counterparty to terminate the portion of the interest rate swap agreement associated with the Series 20X1 Revenue Bonds. Simultaneous with entering into the interest rate swap agreement, the Foundation also entered into a put agreement with the counterparty. The counterparty may exercise this put agreement if the daily weighted-average of the SIFMA Index is greater than 6.00% for the 180-day period ending on the day the counterparty exercises the put option. Under this agreement, the Foundation pays a variable rate of interest, based on the SIFMA Index, on the outstanding principal balance of the related bonds until 2031. For this put agreement, the counterparty pays the Foundation an annual premium of 110.10 basis points on an initial notional amount $96,400,000 over the term of the put agreement, for a net effective combined annual payment by the Foundation to the counterparty for the swap agreement and the put agreement of approximately 3.24%. The premium payment, however, will cease upon exercise of the put agreement. This put agreement, if exercised, will offset the cash flows of the interest rate swap agreement noted above. The fair value of the put agreement at December 31, 20X7 and 20X6, is an asset of approximately $4,970,000 and $5,056,000, respectively, and has been included in other assets. This change in fair value of $(86,000) and $(575,000) for the years ended December 31, 20X7 and 20X6, respectively, has been included in nonoperating gains (losses) since the put agreement is not a hedge and must be adjusted to fair value through the performance indicator. The change in fair value includes the amendment fee of $198,000 received from the counterparty to terminate the portion of the put agreement associated with the Series 20X1 Revenue Bonds.

In anticipation of the issuance of the Series 20X6 Bonds, the Foundation entered into five interest rate swap transactions in October 20X6 with an initial notional amount totaling $233,350,000.

The swap transactions serve to substantially fix the expected net interest expense associated with the Series 20X6 Bonds by converting floating rate borrowings with a notional amount of $233,350,000 to fixed rate borrowings. For the swaps related to the Series 20X6A and 20X6B Bonds, the Foundation pays a fixed rate of 3.502% per annum, and the counterparty pays a variable rate of interest at a rate equal to 57.4% of the 1-month LIBOR rate plus a spread of 0.33%. For the swaps related to the Series 20X6C Bonds and 20X6D Bonds, the Foundation pays a fixed rate of 3.496% per annum, and the counterparty pays a variable rate of interest at a rate equal to 57.4% of the 1-month LIBOR rate plus a spread of 0.33%.

The Foundation has elected not to apply hedge accounting; therefore, the change in fair value is included in nonoperating (gains) losses. The fair value of the interest rate swaps at December 31, 20X7 is a liability of approximately $2,610,000, which equates to the change in fair value from inception of the swaps through the year ended December 31, 20X7.

The Foundation can terminate any of these agreements at any time at current market value. The Foundation would make or receive a payment depending on market value on the date of termination.

The Foundation is exposed to credit losses in the event of nonperformance by the counterparty to the agreements. The counterparty is a creditworthy financial institution, and the Foundation anticipates that the counterparty will be able to fully satisfy its obligation under the agreements.

7. **Pension Plans**

The Foundation implemented a 401(a) defined contribution plan and a 403(b) voluntary savings plan covering substantially all employees. The Foundation contributes from 6% to 13% of participating employees' compensation. Prior to January 1, 20X6, the Foundation's contributions were based on participating employees' age. The plan was amended January 1, 20X6 and these contributions are now based on years of service. The Foundation's contribution expense was approximately $28,495,000 and $26,121,000 in 20X7 and 20X6, respectively.

The Foundation sponsors a defined benefit postretirement plan that provides medical and dental benefits to retirees who meet specific eligibility requirements upon termination of active service. The plan is unfunded and requires covered retirees to contribute a portion of the cost of benefits. The Foundation uses an incremental cost approach in estimating the annual accrued cost related to postretirement benefits other than pensions, which is based on estimates by independent actuaries. Such an approach is considered appropriate since substantially all of the healthcare benefits are provided by the Foundation to retirees, using the Health Plan to manage the care provided. Plan expenses incurred by the Foundation were $880,000 and $822,000 for the years ended December 31, 20X7 and 20X6, respectively.

8. **Assets Limited as to Use**

Certain cash and investments, where their use is limited due to board designations or other purposes as set forth below, are reported as assets limited as to use. The carrying values (in thousands) are at estimated fair values, which are summarized in **TABLE 9A-8**.

TABLE 9A-8 Assets Limited as to Use

	December 31, 20X7	December 31, 20X6
Assets limited as to use and long-term investments		
For donor-restricted purposes, such as research, lectureships, and capital projects	**$84,440**	$67,826
Board designated for specific purposes		
Funded depreciation	**133,028**	118,618

Contingent professional liabilities	**33,357**	46,566
Institutional research	**18,072**	16,241
Investments held by subsidiary	**19,925**	16,019
Other board designated	**178,453**	180,969
	382,835	378,413
Held by trustees under bond agreements	**51,038**	25,937
	518,313	472,176
Less current portion of assets limited as to use	**5,327**	5,088
	$512,986	$467,088

Investment income or loss is included in the excess of revenues and gains over expenses and losses, and includes realized and unrealized gains and losses, interest, and dividends.

TABLE 9A-9 The Foundation's Assets Limited as to Use at December 31 (in Thousands)

	December 31, 20X7	December 31, 20X6
Carried at fair value		
Money market accounts	**$83,900**	$58,833
Certificates of deposit	**1,651**	2,151
U.S. Treasury securities	**74,896**	75,195
Corporate debt securities	**53,412**	82,657
Equity securities	**304,454**	253,340
	518,313	472,176
Less current portion of assets limited as to use	**5,327**	5,088
	$512,986	$467,088

9. Commitments and Contingencies

The Foundation leases equipment and a medical office building under operating leases. These payments are due monthly through December 2012. Rent expense totaled approximately $7,426,000 and $8,715,000 in 20X7 and 20X6, respectively.

Future minimum lease commitments under operating leases that have initial or remaining lease terms in excess of 1 year are as follows as of December 31, 20X7 (in thousands):

20X8	$3,410
20X9	3,544
20X0	3,252
20X1	2,886
20X2	2,287
	$15,379

Sale of Medical Office Building

On December 29, 20X7, the Foundation sold a medical office building to Ross Acquisition of Alexandria (RA) for approximately $22,200,000. The building had a book value of approximately $10,900,000. The transaction included a ground lease with a term of 50 years and HR prepaid

the rent totaling approximately $900,000. The Foundation entered into lease-back agreements for space within the building. The Foundation recognized an immediate gain of approximately $6,100,000 and a deferred gain of approximately $4,300,000 to be recognized over a period equal to the operating lease term.

Other

The Foundation is a defendant in various legal proceedings arising in the ordinary course of business. Although the results of litigation cannot be predicted with certainty, management believes the outcome of pending litigation will not have a material adverse effect on the Foundation's combined financial statements.

On February 21, 20X3, the Foundation entered into a 10-year Master Customer Agreement with COTC, for the provision of services, supplies, and equipment. The agreement provides a platform for the development of the Zuber Center as a fully integrated, all-digital facility. COTC will support the Foundation in five core areas: healthcare information technology applications and infrastructure, medical equipment, telecommunications power, and "smart" building technologies. The agreement provides for a commitment of approximately $200,000,000 from the Foundation to purchase certain goods and services at favorable prices. The Foundation has certain minimum yearly purchase commitments ranging from $10,000,000 to $25,000,000 over the 10-year term of the agreement. For the years ended December 31, 20X7 and 20X6, the Foundation purchased approximately $22,353,000 and $26,372,000, respectively, in goods and services from Siemens and affiliated companies, which exceeded the purchase commitments in those years. Goods and services purchased under the contract total approximately $137,400,000.

The Foundation invests in short-term instruments as part of its money management program. These instruments include short-term government securities and investment grade commercial paper. Generally, an investment firm on behalf of the Foundation manages these investments, and the Foundation has invested in a number of short-term investment grade commercial papers over the years. On October 29, 20X1, the Foundation sold approximately $10,000,000 in MGMTMatrix commercial paper prior to maturity. MGMTMatrix filed a voluntary petition for relief under Chapter 11 on February 17, 20X1. On October 6, 20X3, the Foundation learned that the bankruptcy counsel for MGMTMatrix filed, in U.S. Bankruptcy Court in the District of New York, an attempt to nullify the redemption of certain MGMTMatrix commercial paper including that divested by the Foundation. The case was settled in December 20X7 for approximately $3,900,000 and is included in accrued expenses and other liabilities in the accompanying combined balance sheets. The Foundation paid the settlement amount in October 20X7.

10. Fair Values of Financial Instruments

Generally accepted accounting principles established a framework for measuring fair value that provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

The three levels of the fair value hierarchy under Accounting Standards Codification (ASC) 820-10-50, Fair Value Measurement—Overall, are described here:

- Level 1: Valuation is based on quoted prices for identical instruments traded in active markets. Level 1 securities include primarily overnight repurchase agreements, money market funds, and mutual funds.
- Level 2: Valuation is based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market. At Level 2 securities include an unregistered mutual fund.
- Level 3: Valuation is generated from model-based techniques that use significant assumptions not observable in the market. These unobservable assumptions reflect the Hospital's estimates of assumptions that market participants would use in pricing the asset or liability. Valuation techniques include use of discounted cash flow models and similar techniques. Level 3 securities include an equity fund limited partnership.

Fair value is based on the price that would be received to sell an asset or paid to transfer a

liability in an orderly transaction between market participants at the measurement date. The Hospital maximizes the use of observable inputs and minimizes the use of unobservable inputs when developing fair value measurements.

Fair value measurements for assets and liabilities where there is limited or no observable market data and, therefore, are based primarily on estimates calculated by the Hospital, are based on the economic and competitive environment, the characteristics of the asset or liability and other factors. Therefore, the results cannot be determined with precision and may not be realized upon an actual settlement of the asset or liability. There may be inherent weaknesses in any calculation technique, and changes in the underlying assumptions used, including discount rates and estimates of future cash flows that could significantly affect the results of the current or future values.

The following methods and assumptions were used by the Foundation in estimating the fair value of its financial instruments:

Cash and cash equivalents: The carrying amount reported in the combined balance sheet for cash and cash equivalents approximates its fair value.
Investments: Fair values, which are the amounts reported in the combined balance sheet, are based on quoted market prices.
Interest rate swap agreements: Fair values, which are the amounts reported in the combined balance sheet as due to broker and other assets, are based on market rates.
Long-term debt: The carrying amount of the Foundation's borrowings under its revolving line of credit and auction rate security bond issues approximates fair value. The fair value of the Foundation's other long-term debt is estimated using discounted cash flow analyses, based on the Foundation's current incremental borrowing rates for similar types of borrowing arrangements.

11. Functional Expenses

The Foundation provides healthcare services to residents within its geographical service area.

TABLE 9A-10 The Carrying Amounts and Fair Values of the Foundation's Financial Instruments in the Combined Balance Sheets at December 31 (in Thousands)

	Carrying Amount	Fair Value
20X7		
Cash and cash equivalents	**$82,815**	$82,815
Assets limited as to use	**518,313**	518,313
Due to broker	**15,128**	15,128
Long-term debt	**444,289**	444,349
20X6		
Cash and cash equivalents	**$59,696**	$59,696
Assets limited as to use	**472,176**	472,176
Due to broker	**19,608**	19,608
Long-term debt	**338,262**	340,809

TABLE 9A-11 Expenses Related to Providing These Services for the Years Ended December 31, 20X7 and 20X6 (in Thousands)

	December 31, 20X7	December 31, 20X6
Healthcare services	**$619,596**	562,186
General and administrative	**143,293**	140,546
Fundraising	**1,887**	1,845
Total operating expenses	**$764,776**	704,577

CHAPTER 10

Accounting for Inflation

LEARNING OBJECTIVES

After studying this chapter, you should be able to do the following:

1. Discuss the major types of asset valuation.
2. Describe the alternative units of measurement in financial reporting.
3. Define the major financial reporting alternatives.
4. Describe the uses of financial report information.
5. Describe the difference between monetary and nonmonetary accounts.

REAL-WORLD SCENARIO

Lydia Renee is the CEO of a large metropolitan hospital. She has recently come under attack from the local press regarding profit levels at the hospital. Last year Renee's hospital earned more than $10 million, which was described in the local press as "obscene" because the hospital is tax-exempt. Renee tried to explain that all of the earnings for the hospital were earmarked for future investment and replacement of physical facilities, but the local reporter was adamant about profiteering at the hospital.

Renee's CFO, William Olin, has told her that the need for profit is directly related to the existence of inflation in the cost of plant and equipment that the hospital needs to purchase. For example, a new digital mammography unit was recently acquired for $750,000 to replace an older unit acquired 5 years ago for $350,000. The hospital recognized historical cost depreciation on this older mammography unit of $70,000 per year ($350,000/5) but the real replacement cost of the equipment was much higher.

Olin showed Renee that firms with heavy investments in plant and equipment, such as hospitals, must make positive profits because the historical accounting costs of depreciation grossly understate true replacement costs. Olin then recast the hospital's financial statements using the principles of "constant purchasing power accounting" to demonstrate that the hospital actually incurred a modest loss of $1 million in the most recent year. Renee understands the nature of the purchasing power adjustments that Olin made but is seeking a way to communicate this in a clear manner to the local press.

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To adjust for the effects of changing price levels, the Financial Accounting Standards Board (FASB) has issued a number of pronouncements over the last 40 years. In September 1979, the FASB issued Statement 33, which required large public enterprises to provide supplemental information on the effects of changing price levels in their annual financial reports. In particular, Statement 33 required firms to disclose primarily current cost and constant dollar earnings; certain other income statement items; and current cost of inventory, property, plant, and equipment, in notes to the financial statements. This was a major step for the FASB and represented for the first time that firms were required to report price-level effects in their financial reports.

In 1986, when the inflation rate had subsided to less than 5%, the FASB substantially modified its initial position set forth in Statement 33 with the publication of Statement 89. This pronouncement left much of Statement 33 intact, except that it designated the reporting as voluntary. Consequently, most publicly traded companies stopped disclosing inflation-adjusted earnings. In Statement 89 business enterprises were encouraged, but not required, to report supplementary information on the effects of changing prices in the following areas for the most recent 5 years:

- Net sales and operating revenues, using constant purchasing power
- Income from continuing operations on a current cost basis
- Purchasing power gains or losses from holding monetary items
- Increases in specific prices of net plant, property, and equipment, net of inflation
- Foreign currency translation adjustments on a current cost basis
- Net assets (assets less liabilities) on a current cost basis
- Income per common share from continuing operations on a current cost basis
- Cash dividends per common share
- Market price per common share at year end

The rationale for these changes in financial reporting stems from the inaccuracy and inability of present historical cost reporting to measure financial position accurately in an inflation-riddled economy. Although the U.S. inflation rate has been low in recent years, inflationary pressures can increase at any time and will never be removed entirely. Many countries around the world still experience high inflation. Mexico and Brazil have required some accounting inflationary adjustments for over 20 years. Thus, inflation accounting will continue to be relevant.

Most people understand the effects that general inflation has on their purchasing power and they realize that a dollar in 2006 is not equivalent to a dollar in 2016. Most of us will intuitively make price-level adjustments to account for differences. A person who had a salary of $50,000 in 2006 and a salary of $50,000 in 2016 knows that their overall financial position has eroded because of increases in the Consumer Price Index (CPI). The accounting profession's task is to make its financial statement adjustments easy to understand by the vast majority of people who use and rely on these statements as scorecards of business success.

The major purpose of this chapter is to discuss and describe the major alternatives for reflecting the effects of inflation in financial statements. Specific methods are described and the adjustments that need to be made to convert historical cost statements are illustrated. This discussion should provide a basis for understanding and using financial statements that have been adjusted for inflation.

Learning Objective 1

Discuss the major types of asset valuation.

Reporting Alternatives

Methods of financial reporting can be categorized using two dimensions: (1) the method of asset valuation and (2) the unit of measurement. In chapter 8 we discussed five major principles of accounting. That list of five included the following two principles: cost valuation and a stable monetary unit. When historical cost values do not change and inflation or deflation does not exist, accountants can feel very comfortable using unadjusted historical cost as the method for valuing assets acquired by the firm. If asset values do change or the monetary unit is not stable, then alternative asset valuation rules may be needed. Two alternative methods of asset valuation are (1) **acquisition (or historical) cost** and (2) **current (or replacement) value**.

Asset valuation at acquisition cost means that the value of the asset is not changed over time to reflect changing market values. Amortization of the value may take place, but the basis is the acquisition cost. Depreciation is recorded, using the acquisition (historical) cost of the asset. Use of an acquisition cost valuation method postpones the recognition of gains or losses from holding assets until the point of sale or retirement.

Current valuation of assets revalues the assets in each reporting period. The assets are stated at their current value rather than their acquisition cost.

Likewise, depreciation expense is based on the current value, not the historical cost. Current valuation recognizes gains or losses from holding assets before sale or retirement. If it were easy to obtain objective measures of current asset values, all assets would be restated to current value, but in many cases objective measures of current value may not be obtainable.

Learning Objective 2

Describe the alternative units of measurement in financial reporting.

There are also two major alternative units of measurement in financial reporting: (1) **nominal (unadjusted) dollars** and (2) **constant dollars** measured in units of general purchasing power. Use of a nominal dollar unit of measurement simply means that the attribute being measured is the number of dollars. From an accounting perspective, a dollar of one year is no different from a dollar of another year. No recognition is given to changes in the purchasing power of the dollar because purchasing power is not measured. The major outcome associated with the use of this measurement unit is that gains or losses, regardless of when they are recognized, are not adjusted for changes in purchasing power. For example, if a piece of land that was acquired for $1 million in 1996 were sold for $3 million in 2016, it would have generated a $2 million gain, regardless of changes in the purchasing power of the dollar during the 20-year period.

A constant dollar measuring unit reports the effects of all financial transactions in terms of constant purchasing power. The unit that is usually used is the purchasing power of the dollar at the end of the reporting period or the average during the fiscal year. The measurement is made by multiplying the unadjusted, or nominal, dollars by a price index to convert to a measure of constant purchasing power. During periods of inflation, when using a constant dollar measuring unit, gains from holding assets are reduced, whereas losses are increased. Thus, in the previous land sale example, the initial acquisition cost would be restated to 2016 purchasing power units to reduce the gain, as shown in **EXHIBIT 10-1**. Because the Consumer Price Index or CPI increased from 158.6 in 1996 to 239.2 in 2016, we restate the 1996 cost by the conversion factor (239.2/158.6 or 1.508).

Constant dollar measurement has a further significant effect on financial reporting: the gains or losses created by holding **monetary liabilities** or **monetary assets** during periods of purchasing power changes are recognized in the financial reporting.

EXHIBIT 10-1 Restatement of Land Cost

Unadjusted historical cost	
Sale of land in 2016 (CPI = 239.2)	$3,000,000
Purchase of land in 1996 (CPI = 158.6)	$1,000,000
Unadjusted gain on sale	$2,000,000
Purchasing power cost	
Sale of land in 2016 (CPI = 239.2)	$3,000,000
Conversion factor (CPI 2016/CPI 1996)	1.508
Restated cost of land	$1,508,000
Adjusted gain on sale	$1,492,000

Monetary assets and liabilities are defined as those items that reflect cash or claims to cash that are fixed in terms of the number of dollars, regardless of changes in prices. Almost all liabilities are monetary items, whereas monetary assets consist primarily of cash, marketable securities, and receivables.

Purchasing power gains or losses are recognized on monetary items because there is an assumption that the gains or losses are already realized, because repayments or receipts are fixed. For example, an entity that owed $25 million during a year when the purchasing power of the dollar decreased by 10% would report a $2.5 million (0.10 × $25 million) purchasing power gain. All gains or losses would be recognized, regardless of the asset valuation basis used.

Learning Objective 3

Define the major financial reporting alternatives.

The interfacing of the valuation basis and the unit of measurement basis produces four alternative financial reporting methods (**TABLE 10-1**). Each of the four methods is a possible basis for financial reporting. The **unadjusted historical cost (HC)** method represents the present method used by accountants; the other three methods are alternatives that would provide some degree of inflationary adjustment not present in the HC method. The **HC–general price level adjusted (HC–GPL)** method is often referred to as *constant dollar accounting*, whereas the **current value–general price level adjusted (CV–GPL)** method is referred to as *current cost accounting*.

TABLE 10-1 Alternative Financial Reporting Bases

	Asset Valuation Method	
Unit of Measurement	**Acquisition Cost**	**Current Value**
Nominal dollars	Unadjusted historical cost (HC)	Current value (CV)
Constant dollars	Historical cost–general price level adjusted (HC–GPL)	Current value–general price level adjusted (CV–GPL)
	Constant dollar accounting	Current cost accounting

TABLE 10-2 summarizes the effects the four reporting methods would have on the three critical income statement items assuming price inflation: (1) depreciation expense, (2) purchasing power gains or losses, and (3) unrealized gains in replacement values.

Learning Objective 4

Describe the uses of financial report information.

Uses of Financial Report Information

The measurement of financial position is an important function, and its results are useful to a great variety of decision makers, both internal and external to the organization. Changes in financial reporting methods unquestionably will alter the resulting measures of financial position reported in financial statements. These changes are likely to produce changes in the decisions that are based on the financial reports (**FIGURE 10-1**).

Lenders represent an important category of financial statement users who may change their decisions on the basis of a new financial reporting method. The lender's major concern is the relative financial position of both the individual firm and the industry. A decrease in the relative financial position of the industry could seriously affect both the availability and the cost of credit. If, for a variety of reasons, new measurements of financial position make the healthcare industry appear weaker than other industries, financing terms could change. Particularly for the healthcare industry, which is increasingly dependent on debt financing, the importance of changes in financial

TABLE 10-2 Major Effect of Alternative Reporting Methods on Net Income Measurement

	Impact Variables		
Reporting Methods	**Depreciation Expense**	**Purchasing Power Gains/ Losses**	**Unrealized Gains in Replacement Value**
HC	No change	No change/not recognized	No change/not recognized
HC-GPL	Increase/GPL depreciation recognized	Gain or loss/depends on the net monetary asset position	No change/not recognized
CV	Increase/will recognize replacement cost	No change/not recognized	Gain/will recognize increase in replacement cost
CV-GPL	Increase/will recognize current replacement cost	Gain or loss/depends on the net monetary asset position	Gain/will recognize increase in replacement cost but will reduce amount by changes in the GPL

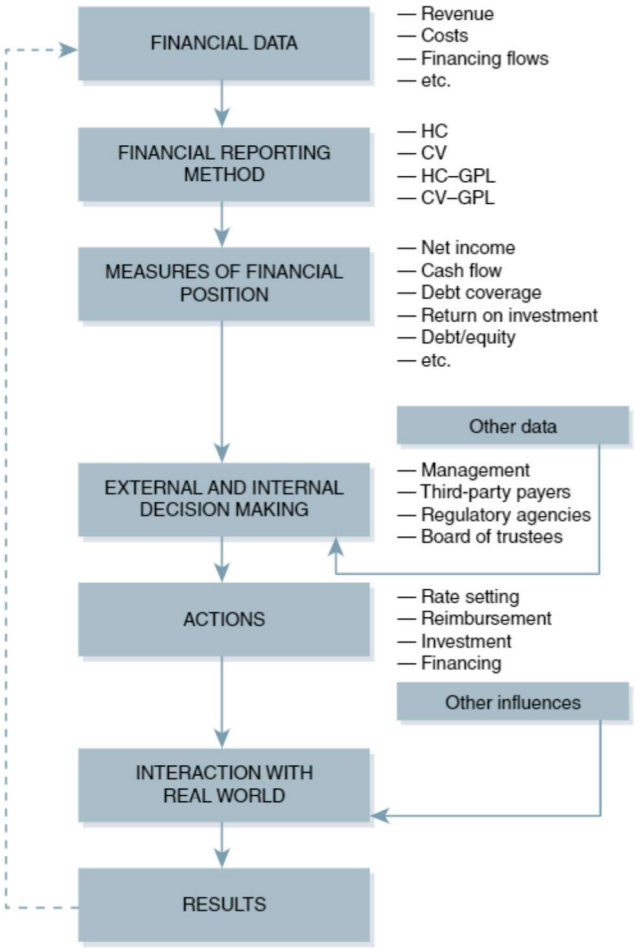

FIGURE 10-1 Financial Data in Decision Making

reporting methods cannot be overstated. Research on the results of changing to an HC–GPL or constant dollar accounting method has shown that the relative financial positions of individual firms and industries are also likely to change.

Changes in financial reporting methods also could have an effect on decisions reached by regulatory and rate-setting organizations. As a result of such changes, comparisons of costs across institutions may be more meaningful than they were previously. For example, depreciation in firms that operate in relatively new physical plants cannot be compared with the unadjusted historical depreciation costs of older facilities. Without financial reporting adjustments, new facilities may appear to have higher costs and thus be less efficient, whereas, in fact, the opposite may be true.

The actions of interested community leaders who have access to, and make decisions based on, financial statements also might be affected by reporting method changes. For example, suppose that individual, corporate, and public agency giving is in part affected by reported income. Many, in fact, regard reported income as a basic index of need, and the relationship between income and giving seems logical. Thus, because each of the alternative financial reporting methods we have discussed will produce a different measure of income, total giving in each case could be affected.

Internal management decisions also might change with a new financial reporting method. Perhaps the most obvious example of such a change would be rate setting. Organizations that have control over pricing decisions and are not reacting to market-determined prices should set prices at levels at least high enough to recover their costs. The use of any of the three alternative methods of reporting will increase reported cost levels and therefore increase rates.

Case Example: Williams Convalescent Center

In the remainder of this chapter, we show how adjustments are made in the income statement and balance sheet of Williams Convalescent Center, a 120-bed skilled and intermediate care facility, to take into account the effects of inflation. The center's two financial statements are shown in **TABLES 10-3** and **10-4**. You will note that values are reported for each of the following three reporting methods: (1) HC, (2) HC–GPL, and (3) CV–GPL. In this discussion, we do not describe or apply the CV method. The accounting profession presently is not seriously considering this method, and it is not likely to be considered in the future. The CV method suffers from a serious flaw: it does not recognize the effects of changing price levels on equity. In short, the CV method treats increases in the replacement cost of assets as a gain and does not restate them for changes in purchasing power.

TABLE 10-5 presents values for the CPI. The CPI is the price index that is presently used by the accounting profession to adjust financial statements for the effects of inflation.

Price Index Conversion

Both of the two methods we have selected to adjust the financial statements of the Williams Convalescent Center (CV–GPL and HC–GPL) use purchasing power as the unit of measurement. This means that unadjusted dollars are not the measurement unit for reporting accounting transactions. This means that all reported values in the financial statements are expressed in dollars of a specified purchasing power. Usually, the purchasing power used is the period end value. In our case example, Williams Convalescent Center uses purchasing power as of December 31,

TABLE 10-3 Statement of Income for Williams Convalescent Center (in Thousands)

	HC 20Y4	Constant Dollar (HC–GPL) 20Y4	Current Cost (CV–GPL) 20Y4
Operating revenue	$3,556	$3,625	$3,625
Operating expenses	3,253	3,316	3,316
Depreciation	74	164	185
Interest	102	104	104
Net income	$127	$41	$20
Purchasing power gain from holding net monetary liabilities during the year	—	$43	$43
Increase in specific prices of property, plant, and equipment during the year	—	—	$136
Less effect of increase in general price level	—	—	$144
Increase in specific prices over (under) increase in the general price level	—	—	($8)
Change in equity due to income transactions	$127	$84	$55

TABLE 10-4 Balance Sheet for Williams Convalescent Center (in Thousands)

	HC		Constant Dollar (HC–GPL) 20Y4	Current Cost (CV–GPL) 20Y4
	20Y3	20Y4		
Current assets				
Cash	$98	$21	$21	$21
Accounts receivable	217	249	249	249
Supplies	22	27	27	27
Prepaid expenses	36	36	36	36
Total current assets	$373	$333	$333	$333
Property and equipment				
Land	200	200	530	525
Building and equipment	2,102	2,228	4,948	5,570

Total land and building and equipment	2,302	2,428	5,478	6,095
Less accumulated depreciation	783	844	1,874	2,186
Investments	161	596	596	596
Total assets	$2,053	$2,513	$4,533	$4,838
Current liabilities	412	493	493	493
Long-term debt	1,203	1,478	1,478	1,478
Partner's equity	438	542	2,562	2,867
Total liabilities and equity	$2,053	$2,513	$4,533	$4,838

TABLE 10-5 Consumer Price Index, Year-End Values

Year	CPI
20X0	119.1
20X1	123.1
20X2	127.3
20X3	138.5
20X4	155.4
20X5	166.3
20X6	174.3
20X7	186.1
20X8	202.9
20X9	229.9
20Y0	258.4
20Y1	283.4
20Y2	292.4
20Y3	303.5
20Y4	315.5

20Y4, as its unit of measurement. This means that we will restate all accounts to a purchasing power of 315.5, the CPI value at 20Y4.

Restatement of nominal or unadjusted dollars to constant dollars is a relatively simple process, at least conceptually. All that is required are the following three pieces of information:

1. The unadjusted value of the account in historical or nominal dollars
2. A price index that reflects the purchasing power in which the unadjusted value is currently expressed
3. A price index that reflects the purchasing power at the date the account is to be restated

For example, Williams Convalescent Center's long-term debt at December 31, 20Y3, is $1,203 (see Table 10-4). To express that amount in constant dollars as of December 31, 20Y4, the following adjustment would be made:

$$\text{Unadjusted amount} \times \text{20Y4 CPI/20Y3 CPI}$$

or

$$\$1,203 \times \frac{315.5}{303.5} = \$1,251$$

The value of the beginning long-term debt for the center would be $1,251, expressed in purchasing power as of December 31, 20Y4. The previously described adjusted method is the same for all other accounts. The price index to which the conversion is made is usually the price index at the ending balance

sheet date (December 31, 20Y4, in our example). The price index from which the conversion is made represents the purchasing power in which the account is currently expressed. This value will vary depending on the classification of the account as either monetary or nonmonetary.

Learning Objective 5

Describe the difference between monetary and nonmonetary accounts.

Monetary Versus Nonmonetary Accounts

When restating financial statements from a system based on an HC method to one based on a constant dollar method, it is critical to distinguish between monetary accounts and nonmonetary accounts. Monetary accounts are automatically stated in current dollars and therefore require no price-level adjustments. Monetary items, discussed earlier in this chapter, consist of cash, claims to cash, or promises to pay cash that are fixed in terms of dollars, regardless of price-level changes. Nonmonetary accounts require price-level adjustments to be stated in current dollars.

Because of the fixed nature of monetary items, holding them during a period of changing price levels creates a **gain or loss**. For example, if a firm holds cash during a period of inflation, the firm will experience a monetary loss because the purchasing power of the cash has eroded over the holding period. Conversely, if a firm has a monetary liability during a period of inflation, it will experience a gain because it will repay the liability with dollars of a lower purchasing power. In constant dollar accounting, purchasing power is the unit of measurement, not unadjusted dollars. This can be seen in **TABLE 10-6**, which includes data from the Williams Convalescent Center (in thousands).

The data in Table 10-6 assume that a repayment of long-term debt and new issue occurred at the midpoint of the year, June 30, 20Y4. The price index at that point would have been approximately 309.5. This resulted from taking the average of the beginning and ending values (303.5 + 315.5) ÷ 2. In constant dollars, the Williams Convalescent Center would have reported $1,531 of long-term debt as of December 31, 20Y4. However, the actual value of the long-term debt at that date was $1,478. The difference of $53 represents a purchasing power gain to the center during the year. Because the price level increased during 20Y4, the value of the long-term debt actually owed by the center declined when measured in constant purchasing power.

Nonmonetary asset accounts must be restated to purchasing power as of the current date. The price index at the time of acquisition represents the price index from which the conversion is made. To illustrate the adjustment, assume that the building and equipment account of the Williams Convalescent Center has the age distribution presented in **TABLE 10-7**.

The data in Table 10-7 show that assets with a historical cost of $2,228 represent $4,948 of cost when stated in dollars as of December 31, 20Y4. The latter value is much more meaningful than the former as a measure of actual asset cost in 20Y4. It provides the center with a measure of cost that is expressed in dollars as of the current date and thus better represents its actual investment. Depreciation expense also should be restated in 20Y4 dollars to accurately portray the center's actual cost of using its building and equipment in the generation of current revenues.

TABLE 10-6 Computation Purchasing Power Gains and Losses

	Unadjusted Historical Dollars	Conversion Factor	Constant Dollars
Beginning long-term debt (12/31/Y3)	$1,203	315.5/303.5	$1,251
– Repayment (6/30/Y4)	152	315.5/309.5	155
+ New debt (6/30/Y4)	427	315.5/309.5	435
Ending long-term debt (12/31/Y4)	$1,478		$1,531
– Actual ending long-term debt (12/31/Y4)			$1,478
Purchasing power gain			$53

TABLE 10-7 Restatement of Nonmonetary Assets

Year	Acquired Cost	Conversion Factor	Constant Dollar Cost (12/31/Y4)
20X0	$1,500	315.5/119.1	$3,974
20X8	401	315.5/202.9	624
20Y1	201	315.5/283.4	224
20Y4	126	315.5/315.5	126
	$2,228		$4,948

Adjusting the Income Statement

Operating Revenues

If one assumes that revenues are realized equally throughout the year, the restatement is significantly simplified. If the assumption is valid—and in most cases it is—it means that the revenues can be considered realized at the midpoint of the year, in our case, June 30, 20Y4. As already noted, the price index at June 30, 20Y4 can be assumed to be the average of the beginning and ending price index, or 309.5. The restated **operating revenue** would be calculated as follows:

$$\text{Operating revenues} \times \text{20Y4 CPI} \div \text{20Y4 mid-year CPI}$$

or

$$\$3{,}556 \times 315.5 \div 309.5 = \$3{,}625$$

Operating Expenses

Based on the same assumption that we used with operating revenues, the adjustment for **operating expenses** would be as follows:

$$\$3{,}253 \times 315.5 \div 309.5 = \$3{,}316$$

Operating expenses do not include depreciation or interest. Separate adjustments for these two items may be required.

Depreciation

The depreciation expense adjustment is different from the earlier adjustments in two ways. First, depreciation expense represents an amortization of assets purchased over a long period, usually many years. This means that the midpoint conversion method used for operating revenues and operating expenses clearly is not appropriate. Second, the adjustment methods for the HC–GPL or constant dollar and CV–GPL or current cost methods diverge. Depreciation expense may vary considerably because the current cost of the assets may differ dramatically from the constant dollar cost. Remember, a price index represents price changes for a large number of goods and services; specific price changes of individual assets may vary significantly from that index. For example, the general price level may have increased 20% in the last 5 years, but the cost of a specific piece of equipment may have increased 50% during the same period.

Constant Dollar Adjustment

We estimate the depreciation expense value for Williams Convalescent Center under the constant dollar method by using the relationship of constant dollar buildings and equipment cost in Table 10-7 to historical cost. This gives us a multiplier of restated cost to historical cost that we can then apply to historical cost depreciation. The multiplier from Table 10-7 is calculated as:

$$\frac{\text{Constant dollar cost}}{\text{Historical cost}} = \$4{,}948/\$2{,}228 = 2.221$$

We then multiply this factor times the historical depreciation expense of $74 to yield a constant dollar depreciation expense of $164.

Current Cost Adjustment

The identification of the current cost of existing physical assets is a subjective and complex process. To many individuals, the current cost method provides little additional value compared with the constant dollar method. Whether it will be eventually eliminated and replaced by the constant dollar method is not clear at this time.

The first issue to address is the definition of current cost. By and large, current cost can be equated to the replacement cost of the assets. In short, we must determine what the cost of replacing assets in today's dollars would be. This could be estimated through a variety of techniques using, for example, insurance appraisals or specific price indexes. In the case of Williams Convalescent Center, we assume that a recent insurance appraisal indicated a replacement cost of $5,570 for buildings and equipment. With this estimate, depreciation expense could be adjusted as follows:

$$\frac{\text{Appraisal cost}}{\text{Historical cost}} \times \text{Depreciation expense} = \text{Restated depreciation expense}$$

or

$$\frac{\$5{,}570}{\$2{,}228} \times \$74 = \$185$$

Interest Expense

We again assume that interest expense is paid equally throughout the year. This assumption produces the following interest expense adjustment:

$$\$102 \times 315.5 \div 309.5 = \$104$$

Purchasing Power Gains or Losses

A purchasing power gain results if one is a net debtor during a period of increasing prices, whereas a purchasing power loss results if one is a net creditor during such a period. In most healthcare firms, purchasing power gains result because liabilities exceed monetary assets. A firm is thus paying its debts with dollars that are of less value than the ones it received.

To calculate purchasing power gains or losses, net monetary asset positions must first be calculated. The net monetary position for Williams Convalescent Center is presented in **TABLE 10-8**.

The actual calculation of the purchasing power gain for Williams Convalescent Center is presented in **TABLE 10-9**.

Because the center was in a net monetary liability position during the year, it experienced a purchasing

TABLE 10-8 Net Monetary Asset Schedule

	Beginning (12/31/Y3)	Ending (12/31/Y4)
Monetary assets		
Cash	$98	$21
Accounts receivable	217	249
Prepaid expenses	36	36
Investments	161	596
Total monetary	$512	$902
Monetary liabilities		
Current liabilities	$412	$493
Long-term	1,203	1,478
Total monetary liabilities	$1,615	$1,971
Net monetary assets	($1,103)	($1,069)

TABLE 10-9 Purchasing Power Gain (Loss) Schedule

	Actual Dollars	Conversion Factor	Constant Dollars
Beginning net monetary liabilities	$1,103	315.5/303.5	$1,147
– Decrease	34	315.5/309.5	35
Ending net monetary liabilities	$1,069		$1,112
– Actual	1,069		
Purchasing power gain			$43

power gain of $43. This value is not an element of net income; it is, rather, shown below the net income line in Table 10-3. It thus affects the change in equity.

Increase in Specific Prices over General Prices

The adjustment to consider—an increase in specific prices over general prices—is made only in the current cost method. The constant dollar method does not recognize any increases (or reductions) in prices that are different from the general price level. In short, no gains or losses from holding assets are permitted in the constant dollar method.

The calculations involved in this adjustment can be complex. In our Williams Convalescent Center example, we will make some assumptions to simplify the arithmetic without impairing the reader's conceptual understanding of the adjustment. We will assume the following data:

Insurance appraisal of buildings and equipment, 12/31/Y3: $5,015
Insurance appraisal of buildings and equipment, 12/31/Y4: $5,570
Appraised value of land, 12/31/Y3: $500
Appraised value of land, 12/31/Y4: $525
New equipment bought on 12/31/Y4: $126

TABLE 10-10 shows the increase in specific prices over general prices. These data show that, during 20Y4, the value of physical assets held by Williams Convalescent Center did not increase more than the general price level. In fact, there was an $8,000 decline in the specific prices of assets held by the firm when compared to the increase in general price level during the year. This may be a positive sign for the center if it is not contemplating a sale. The replacement cost for its assets is increasing less than the general price level. Therefore, revenues could increase less than the general price level and replacement could still be ensured.

Adjusting the Balance Sheet

Monetary Items

None of the monetary items—cash, accounts receivable, prepaid expenses, investments, current liabilities, or long-term debt—requires adjustment. The values of these items already reflect current dollars.

Land

In our discussion of the increase in specific prices over the general price level in the Williams Convalescent Center's income statement, we assumed an appraisal value for land of $525. That value will be used here with the current cost method. With the constant dollar method, we will assume that the land was acquired in 20X0 for $200. To restate that amount to purchasing power as of December 31, 20Y4, the following calculation would be made:

$$\$200 \times 315.5 \div 119.1 = \$530$$

TABLE 10-10 Increase in Specific over General Prices Schedule

	Building and Equipment	Land	Total
Ending appraised value less acquisitions of $126	$5,444	$525	$5,969
– Accumulated depreciation on appraised value	2,186	0	2,186
Ending net appraised value	$3,258	$525	$3,783
Beginning appraised value	$5,015	$500	$5,515
– Accumulated depreciation on appraised value	1,868	—	1,868
Beginning net appraised value	$3,147	$500	$3,647
Beginning net appraised value restated for general price level (315.5/303.5)			$3,791
Increase in specific prices over general price level ($3,783 less $3,791)			($8)

Buildings and Equipment

Values for the center's buildings and equipment and the related accumulated depreciation already have been cited for the current cost method. We will assume those same values here. This produces a value for buildings and equipment of $5,570 (000s omitted) based on an appraisal. The value for accumulated depreciation was derived as follows:

$$\begin{aligned}&\text{Adjusted accumulated depreciation}\\&= \text{Unadjusted accumulated depreciation}\\&\times \frac{\text{Appraised value} - \text{Current year acquisitions}}{\text{Historical cost} - \text{Current year acquisitions}} =\end{aligned}$$

or

$$\$2{,}186 = \$844 \times \frac{(\$5{,}570 - \$126)}{(\$2{,}228 - \$126)}$$

Equity

Equity calculations are not discussed in any detail here. It is enough for our purposes to recognize that equity is a derived figure. Equity must equal total assets less liabilities. In our Williams Convalescent Center example, this generates values of $2,562 for the constant dollar method and $2,867 for the current cost method.

SUMMARY

Financial reporting suffers from its current reliance on the HC valuation concept. Inflation has made many of the reported values in current financial reports meaningless to decision makers. The example used in this chapter illustrates this point. The total asset investment of Williams Convalescent Center is approximately 100% larger when adjusted for inflation under the current cost or constant dollar method. Net income, however, decreased. The result is a dramatic deterioration in return on investment—the single most important test of business success.

TABLE 10-11 summarizes return on assets and return on equity for Williams Convalescent Center.

These reductions are so drastic that they would prompt an investor to seriously question the continuation of the present investment, let alone replacement. More profitable avenues of investment very likely may be available.

To the extent that the Williams Convalescent Center example is representative of many healthcare firms (and it probably is), decisions regarding healthcare business continuation must be evaluated seriously. It is imperative that healthcare companies, like all other businesses, adjust their financial reports to reflect inflation. Whether the method used is current cost or constant dollar is not the issue. The important point is that ignoring the effects of inflation is unwise at best.

TABLE 10-11 Effect of Alternative Reporting Methods on Financial Measures

	Historical Cost	Constant Dollar	Current Cost
Return on assets (ROA)			
Net income/total assets	5.1%	0.9%	0.40%
Revised ROA			
Change in equity due to income transaction/total assets	5.1	1.9	1.1
Return on equity (ROE)			
Net income equity	23.4	1.6	0.7
Revised ROE			
Change in equity due to income transactions/equity	23.4	3.4	1.9

ASSIGNMENTS

Use the data and information presented in **EXHIBIT 10-2** to answer the following questions:

1. What index was used to restate to constant dollars?
2. What method was used to determine current cost values?
3. Is the American Medical Firm (AMF) a net debtor or a net creditor?
4. In 2001, AMF showed a minus $24 million value for the increase in specific prices over general prices. What does this mean?
5. Why are AMF's net operating revenues in 2004 identical for the HC, constant dollar, and current cost methods of reporting?
6. Why is depreciation expense greater in the current cost method than in the constant dollar method?

SOLUTIONS AND ANSWERS

1. AMF used the CPI, which is required by FASB 33 to restate historical costs to constant dollars.
2. AMF used specific price indexes to restate historical costs to current costs. This method contrasts with the use of appraisals discussed in the chapter example.
3. AMF is a net debtor. It has experienced a purchasing power gain in each year from 2000 to 2004. Because prices were increasing during that period, AMF must have had a net monetary liability position in each year.
4. In 2001, the specific prices of AMF's fixed assets must have increased less than the general price level as determined by using the CPI.
5. AMF does not restate revenues or expenses to the fiscal year end, December 31. Instead, they restate to the midpoint of the fiscal year, June 30. Because it is usually assumed that revenues are received equally throughout the year, the midpoint (June 30) would represent the index from which the conversion is made. Because AMF is converting to the midpoint index, the adjustment is 1.0.
6. Depreciation expense under the current cost method exceeds depreciation expense under the constant dollar method because the current cost value of depreciable assets exceeds the constant dollar value of depreciable assets.

EXHIBIT 10-2 Supplementary Financial Information for American Medical Firm (AMF)

Effects of Changing Prices

The company's financial statements have been prepared in accordance with generally accepted accounting principles and reflect historical cost. The goal of the supplemental information that follows is to reflect the decline in the purchasing power of the dollar resulting from inflation. This information should be viewed only as an indication, however, and not as a specific measure of the inflationary impact.

The constant dollars were calculated by adjusting historical cost amounts by the CPI. Current costs, however, reflect the changes in specific prices of land, buildings, and equipment from the date acquired to the present; they differ from constant dollar amounts to the extent that prices in general have increased more or less rapidly than specific prices. The current cost of buildings and equipment was determined by applying published indices to the historical cost.

Net income has been adjusted only for the change in depreciation expense. Other operating expenses, which are the result of current transactions, are, in effect, recorded in amounts approximating purchasing power on the primary financial statements. Depreciation index was determined by applying primary financial statement depreciation rates to restated building and equipment amounts. Because only historical costs are deductible for income tax purposes, the income tax expense in the primary financial statements was not adjusted.

During a period of inflation, the holding of monetary assets (cash, receivables, etc.) results in a purchasing power loss, whereas owing monetary liabilities (current liabilities, long-term debt, deferred credits, etc.) results in a gain. Net monetary gains or losses are not included in the adjusted net income amounts reported.

Consolidated Statement of Income Adjusted for Changing Prices ($ IN MILLIONS)			
	For the Year Ended December 31, 2004		
	As reported in Primary Statements (Historical Cost)	Adjusted for General Inflation (Constant $)	Adjusted for Changes in Specific Prices (Current Costs)
Net operating revenue	$2,065	$2,065	$2,065
Operating and administrative expenses	$1,698	$1,698	$1,698
Depreciation and amortization	84	98	111
Interest	91	91	91
Total cost and expenses	$1,873	$1,887	$1,900
Income from operations	$192	$178	$165
Investment earnings	$24	$24	$24
Income before taxes on income	$216	$202	$189
Taxes on income	$95	$95	$95
Net income	$121	$107	$94
Effective income tax rate	44%	47%	50%
Changing price gains not included in adjusted income: Increase in specific prices (current cost) of property, plant, and equipment held during the year*			$139
Less effect of increase in general price level			68
Excess of increase in specific prices over increase in the general price level			$71

Financial Data Adjusted for Effects on Changing Prices ($ IN MILLIONS)					
	2004	2003	2002	2001	2000
Net operating revenues					
Adjusted for general inflation	$2,065	$1,852	$1,271	$1,070	$832

Net income					
Adjusted for general inflation	107	85	73	54	36
Adjusted for changes in specific prices	94	73	64	46	27
Earnings per share					
Adjusted for general inflation	1.54	1.29	1.18	.95	.82
Adjusted for changes in specific prices	1.35	1.12	1.04	.82	.61
Purchasing power gain from holding net monetary liabilities during the year	28	15	16	22	32
Increase in specific prices of property, plant, and equipment over (under) increase in the general price level	71	85	16	(24)	.77
Net assets at year end (total assets less total liabilities)					
Adjusted for general inflation	1,095	972	756	657	413
Adjusted for changes in specific prices	1,332	1,162	894	809	470
Cash dividends declared per common share	$0.43	$0.39	$0.34	$0.28	$0.21
Adjusted for general inflation					
Market price per common share at year end: adjusted for general inflation	$20.24	$29.41	$12.39	$24.30	$11.66
Average CPI—all urban consumers	303.9	293.4	280.3	257.5	230.0

*As of December 31, 2004, current cost of property, plant, and equipment, net of accumulated depreciation, was $1,915 (his- torical cost $1,349). "Property, plant, and equipment" in both the previous and following data includes land held for expansion.

CHAPTER 11

Analyzing Financial Position

LEARNING OBJECTIVES

After studying this chapter, you should be able to do the following:

1. Describe the balanced scorecard and dashboard reporting.
2. Describe the four key elements of dashboard reporting.
3. Explain what is most important in long-term financial success.
4. Explain what a healthcare firm's primary financial objective should be.
5. Describe the critical drivers of financial performance.
6. Discuss the importance of and types of performance measures.
7. Introduce the hospital cost-index measure.

REAL-WORLD SCENARIO

Michael Dean has been recently appointed to the board of Kenyon Medical Center, a 300-bed not-for-profit community hospital. Mike is an attorney who specializes in labor law and is the firm's primary litigation expert in this area. He is reviewing the financial information that was sent to him this morning in preparation for his first board meeting this evening. His total financial package includes 28 pages of financial information consisting of current monthly income statements, a balance sheet, and other monthly actual-to-budget comparisons of performance with some selected financial ratios.

Tonight's meeting is a critical one because the board's major item for discussion is related to a proposed bond issue to finance a major hospital renovation. Mike recognizes that he has a fiduciary responsibility to protect the assets of the hospital and to ensure its continued financial viability, but he does not know how to determine if the hospital can afford to take on this additional debt. There is so much information and no apparent pattern regarding what really is important. He is also concerned about assessing how the proposed financing would impact the hospital's financial performance and thus its ability to repay both interest and principal on the debt. He recently read a report on "dashboard reporting" and wonders if some structure like this would help him and other board members to get a better appreciation for the financial performance of the hospital.

Opener image: © A1Stock/Shutterstock

The major purpose of this chapter is to introduce some analytical tools for evaluating the financial condition of healthcare entities. Think for a moment how confusing and difficult it would be, without a key, to reach any conclusions about financial position from many financial statements. (See Chapter 9 for examples.) Unless your training is in business or finance, the statements may look like a mass of endless numbers with little meaning. In short, there may be too much information in most financial statements to be digested easily by a general-purpose user.

During the last 30 years, there has been an explosion in the adoption and integration of information technology to financial reporting. Financial data are collected, analyzed, and distributed to decision makers in a more accurate and timely manner and in greater quantity than ever before. However, many people believe that the technology has not had a positive impact on performance. While we have made important strides in the technology of information collection and distribution, we have failed to realize significant improvements in the decision-making value of that information.

What accounts for the failure to take advantage of information technology advances? We think the answer is very clear and is one that most executives would readily acknowledge. We have been using the technology to deliver data, and more of it, to decision makers more rapidly, but we have ignored the issue of information relevance. As a result, we have in many cases simply used technology to deliver irrelevant or inappropriate data more quickly. Bad data delivered more quickly is not likely to improve performance in either the short run or the long run.

Learning Objective 1

Describe the balanced scorecard and dashboard reporting.

In order to improve the collection and communication of financial and operating information **balanced scorecards** and **dashboards** were created. Essentially, these tools are neatly formatted reports that provide information on the organization's performance in a limited number of areas. The reports help focus attention to key performance indicators (also referred to as key metrics or measures) that are typically defined by senior leadership.

The concept of balanced scorecards developed by Robert Kaplan and David Norton represents an attempt to enhance the value of information and exploit the capability of information technology to deliver true value to decision makers. Balanced scorecards, in their stripped-down version, simply state that reporting should be available on the key attributes that affect performance. More data are of little value if they do not provide information to a decision maker that can be used to improve the performance of the firm. Dashboard reporting is a natural subset of balanced scorecards and is being increasingly used in almost all sectors of the economy to keep managers focused on critical areas that will affect overall firm performance.

Learning Objective 2

Describe the four key elements of dashboard reporting.

Developing an Effective Financial Reporting System

Assuming that many healthcare providers are interested in developing a dashboard reporting system for key executives and board members, what needs to be done? In general, four critical questions must be answered:

1. What is most important to the firm's success?
2. What are the critical drivers that influence performance attainment?
3. What are the most relevant measures that reflect critical driver relationships?
4. What relevant benchmarking data are available to assess performance?

In the remainder of this chapter, we will answer these four questions with respect to financial performance. We will then examine a specific hospital example to illustrate the definition and utilization of financial indicators to assess financial performance and to identify critical opportunities for management intervention.

Question One: What Is Most Important for Success?

Understanding financial performance in any business requires some global or summary measure of financial success. For many healthcare organization executives, this measure is often the operating margin (**operating income** divided by revenues). While **operating margin** is important, we believe that relying on this

number as a measure of success can be misleading in many situations. For example, low operating margins may not always be bad and high operating margins may not always be good.

Learning Objective 3

Explain what is most important in long-term financial success.

What should be the primary criterion for financial success in healthcare organizations? We believe that a financially successful organization is capable of generating the resources needed to meet its mission. This creates two immediate questions. First, what are resources? Second, what level of resources is needed to fulfill the mission? Economic resources that are owned or controlled by a business firm are referred to as *assets* and would include such items as supplies, equipment, buildings, and other factors of production that must be present to produce health services. Human resources are not usually shown as assets because the firm does not own an individual, but human resources also are required in the production of products or services. Resources or assets owned by a healthcare organization are shown in its balance sheet, which provides a listing of its assets and the pattern of financing used to acquire those assets. The level of resources required by a healthcare organization depends largely on the range and quantity of health services envisioned in the **mission statement**. In situations when there is no scientific standard for resource requirements, benchmarking against other healthcare organizations may be used to partially address the issue of resource need. A hospital or healthcare firm can find itself in a situation in which it may have too little investment in assets to meet the production needs for services, or it may have excessive investment in assets of a certain category.

Resources can be financed with either debt or equity funds, as any balance sheet clearly shows. A financially successful organization must therefore be capable of generating the amount of funds through debt and/or equity that is needed to finance the required level of resources. **FIGURE 11-1** depicts a simple balance sheet that illustrates these concepts. In this example, our healthcare organization needs to increase its investment in assets, or resources, by $100 million (to a total of $200 million) over the next 7 years to fulfill its mission. This level of future investment should be a byproduct of the firm's strategic plan. A strategic plan should provide some information about projected service levels, which in turn should drive expected investment. Strategic financial planning is the topic of Chapter 13. The rate of annual compounded asset growth for the example in Figure 11-1 is approximately 10% per year. This rate equals the average rate of asset growth in many voluntary not-for-profit hospitals during the last 5 years. Although this growth rate may seem high, remember that this rate incorporates replacement of assets at higher prices, new technology, entry into new product lines requiring new investment, and increases in working capital such as accounts receivable. The healthcare organization depicted in Figure 11-1 has chosen a **financing mix** of 50% equity and 50% debt. This means that 7 years later, the target financing mix will be $100 million of debt and $100 million of equity to finance the $200 million investment in assets.

If an organization must grow to meet its mission then, given our discussion, it must be sensitive to how quickly it grows (the asset growth rate) and how it grows (the mix of debt and equity financing). The principle of **sustainable growth** states that no business entity can generate a growth rate in assets (10% in our example) that is greater than its growth rate in equity (also 10% in our example) for a prolonged period. It may be possible to generate new asset growth of 15% for several years when equity growth is only 5% by changing the percentages of equity and debt financing. There is no mystery in the principle of sustainable growth, and it is not some esoteric finance concept that bears no relationship to reality. Any business will have its asset growth rates limited by its ability to generate new equity growth. To not believe in

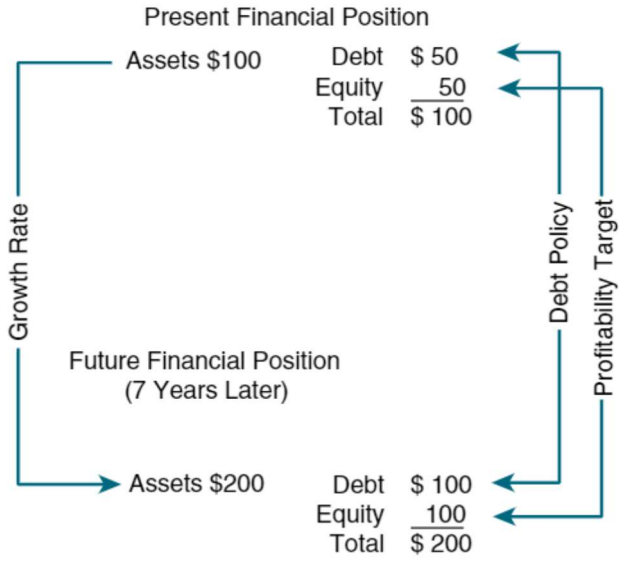

FIGURE 11-1 Sustainable Growth

the validity of this concept would imply that a firm could always increase its percentage of debt financing to any level. There are no exceptions to this theorem. It is not something that represents a nice target; it is a fundamental principle of business from which no one is exempt. Some governmental healthcare organizations may argue that they always generate growth rates in equity less than their asset growth because they get capital funds directly from their governmental sponsors. Those transfers represent a transfer of equity and are a part of equity growth. To be clear, the most important aspect of long-term financial success is sustainable growth.

Learning Objective 4

Explain what a firm's primary financial objective should be.

If sustainable growth (equity growth that meets or exceeds asset growth) is an organization's long-term financial goal, then there is no other financial objective that is more important than **equity growth**. Healthcare organizations that expect low rates of equity growth in the future most likely will not be able to provide the level of resources sufficient to meet their mission. If your healthcare organization anticipates growth rates in equity of only 5% over the next decade, it is almost certain that your asset growth potential will be no greater than 5%. Although the objective is not to add assets or investments for the sake of growth, healthcare organizations that remain viable must add new investments. Healthcare organizations with low rates of growth in equity most likely will experience most of their asset growth in working-capital areas, such as accounts receivable and supplies. These firms will invest very little in renovation and replacement of existing equipment and plant and very little in new capital required for entry into new markets. If they are surrounded by firms that are not experiencing low equity growth rates, their market share will decrease as their relative delivery capability deteriorates.

Growth rate in equity (GRIE) can be expressed as follows:

$$\frac{\text{Change in equity}}{\text{Equity}} = \frac{\text{Net income}}{\text{Equity}} \times \frac{\text{Change in equity}}{\text{Net income}}$$

Most voluntary not-for-profit healthcare organizations do not have a source of equity other than net income. This means that no transfers of funds from government or large restricted endowments exist to increase the firm's change in equity from the level of reported net income. In these situations, the term change in equity/net income equals 1; therefore, GRIE can be defined as net income divided by equity, or **return on equity (ROE)**. ROE is therefore the primary financial criterion that should be used to evaluate and target financial performance for voluntary not-for-profit healthcare organizations when transfers of new equity are not likely. ROE is also the primary financial criterion that should be used to evaluate and target financial performance for taxable for-profit firms.

In sum, to answer our first question of "what is most important" in dashboard creation, we believe that organizations must focus on sustainable growth in order to be viable long term. Sustainable growth, and equity growth in particular, can be measured by ROE. Therefore, the most important long-term financial metric that can be included on a financial dashboard is ROE. In the remaining portions of this chapter, we will explore how the relationships that drive ROE impact the rest of the financial dashboard.

Learning Objective 5

Describe the critical drivers of financial performance.

Question Two: What Are the Critical Drivers of Performance?

At present, we only have one measure on our financial dashboard: return on equity (ROE). If improving ROE is our goal it is important to understand the underlying performance relationships that will impact that growth. ROE is simply defined as:

$$\text{ROE} = \frac{\text{Net income}}{\text{Equity (or Net assets)}}$$

However, ROE can be factored into a number of components that help executives analyze and improve their ROE values. The following equation also defines ROE:

$$\text{ROE} = \frac{\text{Operating income} + \text{Nonoperating income}}{\text{Revenue}} \times \frac{\text{Revenue}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$

This alternative formula tells us that there are a variety of ways that an organization can improve its ROE. First, it can improve its operating margins (operating income divided by revenue). Second, it can increase its nonoperating gain ratio (nonoperating income

divided by revenue). Third, it can increase its **total asset turnover** (revenue divided by assets). Fourth, it can reduce its equity-financing ratio (equity divided by assets). Operating margin improvement is an important strategy for improving ROE, but it is not the only way that ROE can be increased and sustainable growth achieved. **FIGURE 11-2** depicts the critical relationships affecting financial performance in most healthcare firms.

If we assume that ROE, or business unit value, is the primary measure of financial-performance success, the schematic in Figure 11-2 provides a road map of the critical drivers of performance. The schematic shows that the three primary determinants of value are profit, investment, and cost of capital. These three primary determinants of value can be related to a set of macro drivers, and then ultimately to a number of micro value drivers that will enable measurement and modeling for effective dashboard reporting.

It is important for every healthcare firm interested in developing a set of measures to monitor and evaluate performance to start with a model similar to the one defined in Figure 11-2. Without this type of framework, many executives simply try to define a set of measures from those that currently exist or could be created. Defining measures without understanding key relationships can be dangerous. For example, reporting man-hours per discharge without adjusting for case-mix intensity can lead to erroneous conclusions and potentially bad decisions. Know your business before you determine how best to capture the essence of its performance.

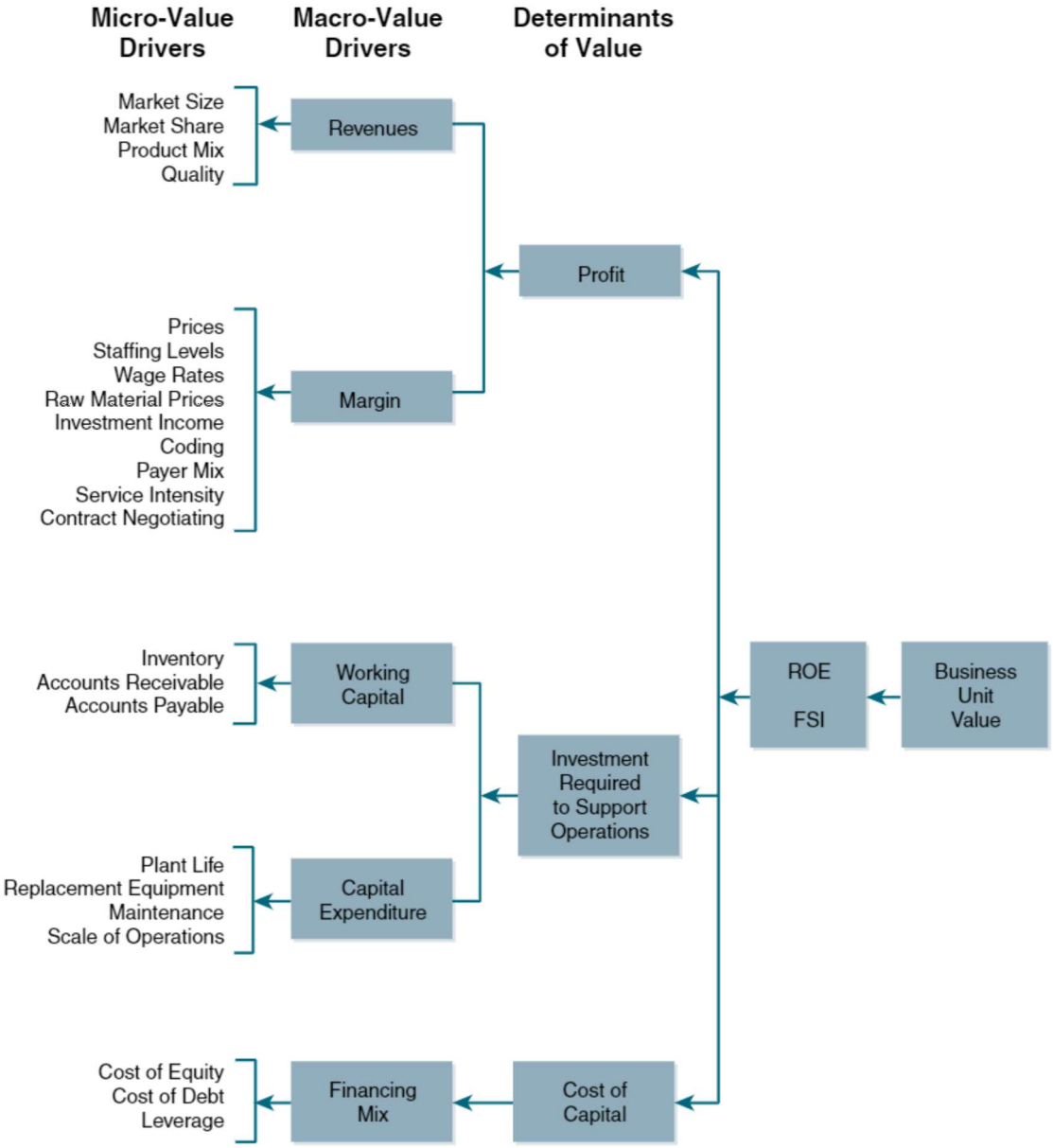

FIGURE 11-2 **Micro and Macro Drivers**

Learning Objective 6

Discuss the importance of and types of performance measures.

Question Three: What Are the Most Relevant Metrics?

Understanding the relationships that drive performance permits one to define **performance measures** that should focus management attention on areas that need correction. There is always a dilemma encountered in the definition of the measures that will be used for reporting. First, the absolute number of measures used must be limited. The measures used should have a high probability of problem/opportunity detection. For example, in our sample hospital's dashboard report, we assess the probability of a supply or drug cost problem by examining costs for four high-profile DRGs. Second, the measures should be naturally related to the key driver map developed earlier (Figure 11-2). In the case of our dashboard report we identify 13 critical performance driver categories:

1. Market factors
2. Pricing
3. Coding
4. Contract negotiation
5. Overall cost
6. Labor costs
7. Departmental costs
8. Supply and drug costs
9. Service intensity
10. Nonoperating income
11. Investment efficiency
12. Plant obsolescence
13. Capital position

Third, the measures used should be capable of external validation or benchmarking. Measuring current performance against past performance may be helpful in some cases, but ideally comparative industry benchmarks should be available.

Our hospital dashboard report contains 49 measures that are related to the 13 critical performance driver categories. Each of these measures can be related to external comparative data as well as to comparisons with individual market area competitors. Benchmarking data from competitors is extremely valuable. We discuss the measures used for each of the 13 performance drivers when we begin our case discussion.

Question Four: What Benchmarking Data Should Be Used?

Comparative **benchmarking data** are crucial ingredients to the success of any dashboard-reporting system. Ideally, a business would like some comparative reference points. How am I doing with respect to similar firms in my industry? How am I doing relative to my primary competitors?

Identifying measures that are able to capture the nuances of revenue or cost drivers is nice, but it may be of little value if no external comparative benchmarks can be found. For example, most hospitals would like to measure and compare nursing cost on an acuity-adjusted basis, but uniform benchmarks are not currently available. In this situation, direct nursing cost per patient-day may be the best that one can do.

The measures that are used in this chapter for our case hospital allow external comparisons and competitor comparisons because the databases employed in measure definition are publicly available from the following sources:

- Medicare Cost Reports
- Standard analytical outpatient file (SAOF)
- MedPAR File

Case Example: Harris Memorial Hospital

For the remainder of this chapter, we illustrate the use of financial analysis techniques through a case example: Harris Memorial Hospital and Harris Community Foundation (HCF). You will recall HCF from Chapter 9. We will be using the audit for HCF in Appendix 9-A to calculate many of the financial ratios in our dashboard. HCF has one primary competitor in its market: Eastside Healthcare. The primary hospital for HCF is Harris Memorial Hospital, a 430-bed facility. The primary hospital for Eastside Healthcare is Eastside Medical Center, a 170-bed facility. Many of the metrics on our dashboard will relate only to the primary hospitals. These metrics will be calculated from the public data sources (cost reports, SAOF, MedPAR) and will not directly tie to the audit. (See Appendix 9-A.) In sum, when examining our sample dashboard you can practice calculating the metrics when the data source is listed as "Audit," but cannot practice calculations for the other data sources. In the end, it is most important to understand how to interpret the metrics, not simply know how they are calculated. The dashboard can be found in **TABLE 11-1**.

TABLE 11-1 Dashboard for Harris Memorial Hospital

Data Element	Data Source	Formula	Harris Memorial Hospital	Eastside Medical Center	U.S. Median
Overview					
Return on equity	Audit	Excess of revenue over expenses/Net assets	9.0	13.8	8.5
Financial strength index®	Audit	[Total margin – 4%/4%] + [Days cash on hand – 120/120] + [50% – Debt financing%/50%] + [9 – Average age of plant/9]	1.7	2.4	–0.3
Total margin	Audit	Excess of revenues over expenses/Operating revenue + Nonoperating gains	7.5	8.3	5.0
Market factors					
Inpatient revenue %	Public	Gross IP revenue/Gross patient revenue	30.5	61.9	46.2
Surgical cases %	Public	Medicare surgical discharges/Medicare total discharges	35.6	38.3	23.7
Market share %	Public	Net patient revenue/Sum of net patient revenue in county	65.5	34.5	57.4
Medicaid days %**	Public	Medicaid patient-days/Total patient-days	23.2	12.4	19.4
Medicare days %**	Public	Medicare patient-days/Total patient-days	42.3	59.7	54.1
Revenue growth (last year) %	Audit	(Operating revenue current year – Operating revenue prior year)/Operating revenue prior year	7.3	10.5	5.4
Pricing					
Average charge per Medicare discharge (CMI = 1.0)*	Public	All Medicare inpatient charges/(Number of discharges × CMI)	25,052	27,506	22,506
Average charge per visit (RW = 1.0)*	Public	Average Medicare visit charge/Average relative weight	307	410	353
Routine room rate*	Public	Average charge for routine care	640	1,667	1,372
Chest x-ray (71020)*	Public	Average charge for chest x-ray	291	385	301
Coding factors					
Change in Medicare CMI %	Public	Percentage change in Medicare case-mix index (2 years)	–1.9	3.4	2.1

(continues)

TABLE 11-1 Dashboard for Harris Memorial Hospital *(continued)*

Data Element	Data Source	Formula	Harris Memorial Hospital	Eastside Medical Center	U.S. Median
Medicare CMI	Public	Measure of the costliness of cases treated by a hospital relative to the national average of all Medicare hospital cases, using DRG weights as a measure of relative costliness of cases	1.7644	1.7439	1.5243
CC/MCC capture rate	Public	The number of Medicare cases in MS-DRGs with a CC or MCC designation divided by the total Medicare cases	67.0	68.0	60.0
Average relative weight per outpatient visit (SMI)	Public	Based on weights for all CPT/HCPCS codes	4.6	7.7	9.2
Injectable drug without administration %	Public	Claim chosen if pharmaceutical item requiring injection or infusion present without the administration procedure	24.1	8.1	10.0
Contract negotiation					
Nongovernment payers %	Public	Percent of revenue from sources other than Medicare or Medicaid	34.4	27.9	23.9
Markup (charges/cost)	Public	(Gross patient revenue + Other operating revenue)/Total operating expenses	2.8	3.8	3.3
Deduction %	Public	Contractual allowances/Gross patient revenue	72.6	67.5	69.9
Net patient revenue per equivalent discharge™*	Public	Net patient revenue/Equivalent discharges™	6,683	8,701	7,798
Cost position					
Hospital cost index*	Public	[(Average cost per Medicare discharge/U.S. median) × IP revenue%] + [(Average cost per visit/U.S. median) × Average OP revenue %]	99.5	107.2	101.2
Average cost per Medicare discharge (CMI = 1.0)*	Public	Medicare inpatient costs/(Medicare discharges average CMI)	7,345	7,084	6,858
Average cost per visit (RW = 1.0)*	Public	Average Medicare visit costs/Average relative weight	76	92	79

Labor costs					
Net patient revenue per FTE*	Public	Net patient revenue/FTEs	179,127	141,281	172,373
Man-hours per equivalent discharge™	Public	Paid hours/Equivalent discharges™	68.3	105.5	102.0
Salary per FTE*	Public	Salaries/FTEs	75,171	69,181	60,809
Departmental cost					
Direct cost per routine day*	Public	Direct routine costs/Routine patient-days	411	509	451
Direct cost per ICU/CCU day*	Public	Direct ICU and CCU Costs/ICU and CCU patient-days	788	862	881
Overhead cost %	Public	Overhead expenses/Total expenses	37	34	34
Capital costs per equivalent discharge™*	Public	Capital-related costs/Equivalent discharges™	768	469	572
Supply and drug costs					
MS-DRG 247 supply cost	Public	Perc cardiovasc proc w drug-eluting stent w/o MCC	2,895	4,764	3,839
MS-DRG 470 supply cost	Public	Major joint replacement or reattachment of lower extremity w/o MCC	4,668	6,346	5,667
MS-DRG 194 pharmacy cost	Public	Simple pneumonia & pleurisy w CC	1,166	585	787
MS-DRG 603 pharmacy cost	Public	Cellulitis w/o MCC	1,337	852	820
Service intensity					
Medicare LOS (CMI = 1.0)	Public	Medicare inpatient-days/(Medicare discharges × CMI)	2.7	2.5	3.0
Ancillary cost per Medicare discharge (CMI = 1.0)*	Public	Medicare ancillary costs/(Medicare discharges × CMI)	5,360	3,906	3,635
Nonoperating income					
Days cash on hand†	Audit	(Cash and cash equivalents + Long-term investments)/[(Total expenses – Depreciation)/365]	236	220	33

(continues)

TABLE 11-1 Dashboard for Harris Memorial Hospital *(continued)*

Data Element	Data Source	Formula	Harris Memorial Hospital	Eastside Medical Center	U.S. Median
Investment income/ investment %	Audit	Investment income/Total investments	5.9	0.0	0.7
Portfolio in equities %	Audit	Equity investments/Total investments	58.7	N/A	50.0
Investment efficiency					
Days in accounts receivable	Audit	Net accounts receivable/(Net patient revenue/365)	30.8	72.0	53.0
Inventory/Net patient revenue %	Audit	Inventory/Net patient revenue	0.9	2.9	2.0
Revenue/Net fixed assets	Audit	Operating revenue/Net fixed assets	1.4	2.9	2.5
Plant obsolescence					
Average age of plant	Audit	Accumulated depreciation/Depreciation expense	11.1	8.2	11.1
Two-year change in net fixed assets	Audit	[Net fixed assets – Net fixed assets (2 yr prior)]/ Net fixed assets (2 yr prior)	37.2	44.6	–2.4
Capital position					
Long-term debt/ Equity %	Audit	Long-term debt/Net assets	72.1	37.8	15.0
Average cost of equity %	Public	Risk-free rate on U.S. government obligations + Estimated beta of firm × Market risk premium	9.1	7.8	5.7
Debt financing %	Audit	(Total assets – Net asets)/Total assets	47.5	31.6	42.1
Cash flow to total debt %	Audit	(Net income + Depreciation)/Total liability	17.1	29.6	10.5
Debt service coverage	Audit	(Net income + Depreciation + Interest)/ (Principal payment + Interest)	6.9	N/A	N/A

CMI, case-mix index; MCC, major compication and comorbidity.
*Wage index adjusted metric to remove differences in cost of living.
**Medicaid and Medicare days % include government-sponsored health maintenance organization (HMO) days.
†DCOH for Eastside and U.S. median based on Medicare cost report (Worksheet G) and may be understated.

Dashboard: Overall Performance

Three measures of overall performance are identified in Table 11-1:

- Return on equity (ROE)
- Financial strength index® (FSI)
- Total margin (TM)

For all three of these measures, larger values are desirable. A quick review of the data in Table 11-1 reveals a strong position for Harris when compared to U.S. medians. However, Eastside has better performance in all three measures. Before we discuss these measures, we will define them and compute values for 20X7.

$$\text{ROE} = \frac{\text{Excess of revenue over expenses}}{\text{Net assets}} = \frac{61{,}743}{684{,}619} = 9.0\%$$

$$\text{TM} = \frac{\text{Excess of revenues over expenses}}{\text{Operating revenue} + \text{Nonoperating gains}} = \frac{61{,}743}{800{,}209 + 26{,}310} = 7.5\%$$

$$\text{FSI} = \left[\frac{\text{Total margin} - 4.0}{4.0}\right] = \frac{7.5 - 4.0}{4.0} = 0.88$$

$$+$$

$$\left[\frac{\text{Days cash on hand} - 120}{120}\right] = \frac{236 - 120}{120} = 0.97$$

$$+$$

$$\left[\frac{50 - \text{Debt financing \%}}{50}\right] = \frac{50.0 - 47.5}{50.0} = 0.05$$

$$+$$

$$\left[\frac{9.0 - \text{Average age of plant}}{9.0}\right] = \frac{9.0 - 11.1}{9.0} = -0.23$$

$$= 0.88 + 0.97 + 0.05 + (0.23) = -1.67$$

Harris' value for ROE is 9.0%, which indicates that the firm has a positive bottom line. A review of the data shows that Harris has reported sizable balances of both operating and nonoperating income in 20X7 and 20X6. Also note the sizable increases in equity that resulted from unrealized gains on investments ($2,171,000 in 20X7 and $8,354,000 in 20X6). (See data in Appendix 9-A.) While these gains will not impact net income until the securities are sold, they did raise the level of total equity at Harris.

Total margin measures the return on revenue from both operating and nonoperating sources. Harris is realizing positive returns in both areas, but nonoperating returns in 20X7 were lower than those in 20X6.

The final overall measure is the **financial strength index®** (FSI). FSI attempts to measure the four areas of financial position that collectively determine a firm's financial strength:

- Profits—measured by total margin (normalized average target: 4%)
- Liquidity—measured by days cash on hand (normalized average target: 120 days)
- Debt expense—measured by debt financing percentage (normalized average target: 50%)
- Age of physical facilities—measured by average age of plant (normalized average target: 9 years)

Simply stated, firms that have high profits, lots of cash, little debt, and new plants have great financial strength. Firms with losses, little cash, lots of debt, and old physical facilities will not be in business long. Each of the four measures is "normalized" around a predefined average for the measure. This permits us to add the four measures to create a composite indicator of total financial strength. Harris has a very strong overall financial strength index (FSI) due primarily to its favorable total-margin position and its strong cash position. Harris's strong cash position is also a factor that impacts total margin. In 20X7 nearly 50% of Harris's total net income was derived from investment income. Debt levels at Harris are also below normative values, which further enhances its overall financial strength.

A critical objective for Harris in coming years will be to maintain its current financial position and figure out how to better compete with Eastside, which has better ROI, margin, and overall financial strength. We now focus our attention on reviewing the 13 critical drivers of performance listed earlier to identify possible areas of opportunity for Harris.

Market Factors

There are many factors that influence the financial performance of a healthcare provider, as the schematic in Figure 11-2 shows. Market factors play an important role in the final financial performance of any business. There are six measures of market factors identified in Table 11-1:

1. Inpatient revenue percentage
2. Surgical cases percentage
3. Market share percentage
4. Medicaid days percentage
5. Medicare days percentage
6. Revenue growth

Inpatient revenue at Harris is only 30.5% compared with 61.9% at its Eastside and 46.2% nationwide. In most situations, a higher percentage of inpatient revenue is desirable because profit margins are usually higher on inpatient product lines. For example, many U.S. hospitals make positive margins on Medicare inpatients but most hospitals lose money on Medicare outpatients.

Harris does a lot of surgery compared to U.S. averages but less than Eastside does. Usually, *surgical inpatient cases* are more profitable than are medical cases.

Market share is perhaps the most critical measure of performance in the market-factor category. High market share often leads to higher realized prices and lower cost per unit. If a healthcare provider had no competitors and operated as a monopoly, it could conceivably dictate price to all payer groups except Medicare and Medicaid. The market share position of Harris is higher than that of Eastside. Harris enjoys greater market share, which should give it a better contract-negotiation position. Because only

two providers dominate this market, both hospitals should be able to demand and receive favorable contract terms because neither hospital has the capacity to service the entire market. We explore this further in the contract negotiation section.

In addition to the ability to negotiate more favorable reimbursement terms, higher market share also can provide significant improvements in profits because of lower cost per unit. Greater volume will spread fixed costs among more patients.

Medicare and Medicaid percentages provide an indication of payer-segment importance. Usually, Medicaid is perceived as a less desirable payer while Medicare in many hospitals is a desirable payer, especially for acute inpatient care. Harris appears to have an unfavorable relationship here. It has much higher Medicaid volume compared with its competitor and U.S. averages, while it has lower percentages of Medicare. Harris's geographical location has placed it closer to the Medicaid population than its primary competitor. Losses on Medicaid patients are substantial and, when combined with Medicare losses, create a need for higher payments from the limited private-payer base.

Revenue growth at Harris is above U.S. averages but below Eastside. This is most likely a result of Harris's greater growth in Medicaid volume. While revenue growth is desirable, revenue growth in profitable product lines is critical. Harris has experienced growth in some less profitable lines such as Medicaid, and this can hurt overall profitability.

Conclusions reached from our review of market factors are:

- Harris must concentrate growth strategies in product lines that are profitable, especially inpatient surgical areas.
- If market-share enhancement is not feasible, cost cutting must be pursued or unprofitable product lines must be eliminated.
- Reduced reliance on Medicaid business is desirable.

Pricing Factors

Pricing can still have a sizable influence on a healthcare firm's profitability, even considering that many payers have fixed-fee reimbursement schedules. Of concern to many is the **price elasticity** of healthcare services. In simple terms, will volume drop if I raise prices? This is a difficult question to answer, but in many cases, price elasticity is believed to be negligible for many healthcare services. If a healthcare firm's prices are lower than those of its competitors, the issue of price elasticity becomes of less importance. The first objective is, therefore, to determine whether your prices are above or below those of your competitors. The four pricing measures are all developed from public data sets and are presented in Table 11-1. The data show that Harris has prices below its competitor's and the national average in all four metrics.

Average charge per Medicare discharge (CMI = 1.0) defines the average price for a Medicare discharge with a case-mix weight of 1.0. **TABLE 11-2**

TABLE 11-2 Illustration of Case-Mix Weighting

DRG	Case Weight	Number of Cases	Aggregate Case Weight	Total Charges
1	0.80	10	8.00	$64,000
2	1.20	10	12.00	96,000
3	1.60	10	16.00	128,000
		30	36.00	$288,000

$$\text{Average charge per case} = \frac{\$288,000}{30} = \$9,600$$

$$\text{Average charge per case } (\text{CMI} = 1.0) = \frac{\$288,000}{36} = \$8,000$$

$$\text{Average case weight} = \frac{36}{30} = 1.2$$

provides a simple example to illustrate how this measure is developed. Adjusting charges or cost to a case weight of 1.0 permits meaningful comparisons across firms. Table 11-1 also indicates that this measure for the U.S. median is stated in the hospital's wage index of 0.9246. This removes potential cost-of-living issues that might impair comparability. Charges for a specific discharge or an outpatient encounter are the product of two factors:

- Intensity of service
- Charges for specific procedures

An inpatient discharge has a large number of services provided, such as routine nursing, laboratory procedures, surgical procedures, drugs, and many others. Total charges may be high not because of high procedure prices but because of high utilization of services, for example, a long length of stay. A high total charge can also result from high procedure-level prices even in situations of low service intensity. Harris's inpatient charge per case is below that of Eastside and the U.S. average on a case- and wage-index adjusted basis. It is unusual that Harris has been able to maintain lower charges given its high Medicaid volume. High percentages of Medicaid are often associated with large indigent populations, which often increase prices to the private payer base. It is likely that Harris has been able to keep charges lower because of its higher market share.

Average charge per Medicare visit adjusted for relative weight is a concept similar to the average charge per Medicare discharge case-mix adjusted measure just described. It uses the weights assigned by Medicare to pay for outpatient procedures to case-mix adjust individual claims. We will discuss this measure further when we review cost measures. Data for the outpatient charge measure are similar to the inpatient measure just discussed. Harris has a charge structure below the U.S. average and its local competitor.

The last two measures, *routine room rate* and *chest x-ray* represent two specific high-volume procedures. Harris has lower prices for both.

Since prices at Harris are low compared to its competitor, a rate increase might be initiated with little or no damage to its competitive position. A rate increase of 5% would most likely keep Harris's prices in its same relative position because many hospitals change rates annually by about this percentage, but how much profit would result? The answer depends on the percentage of patients who pay for services on a charge or discounted-charge basis. **TABLE 11-3** provides some results for alternative charge-payer percentages. The possible improvement in profit from a price increase is large and could maintain Harris's profitability. Most hospitals have charge-payer percentages that are between 10 and 20%, so the range is realistic. In fact, many managed-care contracts provide for fixed case or per diem inpatient payments but more percentage-of-charge payments for outpatient care. Even in situations where payments are all set at fixed rates, most contracts contain charge-based components through outlier (where claims are paid on a charge basis once a certain dollar amount is reached)

TABLE 11-3 Profit Resulting from Pricing Increase

	Percentage-of-Charge Payers	
	10%	**20%**
Present gross charges	$2,109,427,000	$2,109,427,000
times charge payer %	10%	20%
Charge-driven revenue	$210,942,700	$421,885,400
times rate increase %	5%	5%
Potential new charges	$10,547,135	$21,094,270
times average recovery %	30%	30%
Profit Change	$3,164,141	$6,328,281

or lesser-of (where charges are paid unless the claim reaches the specific fixed payment rate) clauses that lead to net revenue impact from pricing changes. The price-setting function is described in greater depth in Chapter 6.

The conclusion reached from our pricing review is:

- Harris should initiate a rate increase, approximately 5%, to put its rates closer to its competitor's. An increase of this size could generate close to $6 million in profit.

Coding Factors

Coding can have a significant effect on the actual payment received in almost every healthcare sector, from physician services to hospitals, and for almost every type of payer, from self-pay to Medicare. Coding can also be a two-edged sword. Code too aggressively or fraudulently, and you may be prosecuted. Undercode patient services, and you will lose sizable legitimate payments.

In our hospital dashboard in Table 11-1, we identified five primary coding measures that assess Medicare inpatient and outpatient coding. Data for these measures are provided from publicly available sources.

Medicare case-mix index (CMI) provides an indication of the average complexity of Medicare inpatients seen. Table 11-2 provides a simple example to illustrate the computation of a case-mix index. In that example, the average case-mix index for the 30 patients was 1.2. Harris has a Medicare CMI of 1.7644, which approximates its competitor's value (1.7439) but is above the U.S. median (1.5243).

Of special interest is the 2-year decline in Harris's Medicare case mix. This decline compares to a 2.1% increase nationally and 3.4% increase at Eastside.

A more specific way to assess coding reasonableness is to review so-called **Medicare severity diagnosis-related groups (MS-DRG)** families—the payment classification system used by Medicare for inpatient hospital services. These are groups (usually two or three per group) of MS-DRGs in which possible missed information in the medical records could affect MS-DRG assignment. One of the most critical relationships to evaluate is the frequency at which patients are assigned into the higher weighted MS-DRGs. A patient is assigned to the higher weighted MS-DRG when the patient presents with a comorbidity or complication (CC or MCC). The **CC/MCC capture rate** shows that Harris assigns patients into the higher MS-DRGs 67% of the time—very close to Eastside and above the U.S. average. This finding would suggest that Harris is likely not upcoding or downcoding, although there may be opportunities by individual MS-DRG families.

The last two measures in the coding area evaluate outpatient performance. The first is the **average relative weight per outpatient visit (service mix index)**. Similar to CMI for inpatient services, the SMI measures the resource intensity of outpatient services by measuring the number of paid HCPCS codes on each claim. Consider a patient that has an emergency room visit that carries an APC weight of 2.3 and a chest x-ray with a weight of 0.8. The total relative weight for this patient would be 3.1. To calculate the SMI, an organization would sum all the relative weights and divide by the sum of the patient visits. This metric shows that Harris has an average of 4.6 paid APC procedure weights per visit, which is below Eastside and the U.S. average. This implies that Harris has fewer Medicare-paid services per claim. A portion of this could be due to different services (perhaps Harris does more clinic visits that carry lower weights). However, it also could be that Harris is not capturing all of the services it is providing to patients when it is billing for them on patient claims. To evaluate the latter, we look at one example of outpatient charge capture: the percentage of Medicare outpatient claims with an injectable drug present but with no drug-administration code (injection procedure) present. This metric represents one of many where hospital administrators can tell charges were missed because one service demands another be performed. At Harris, this specific situation was present 24.1% of the time. In essence, nearly 25% of the time Harris missed the reimbursement it was due for administering a drug to a patient simply because the hospital failed to report it on the patient claim. This amount is significantly higher than Eastside and the U.S. average. Conclusions reached from our coding review are:

- Harris should evaluate the sources of case-mix index decline.
- Harris should pursue an outpatient claims assessment to determine where potential missed reimbursement opportunities are present.

Contract Negotiation Factors

A popular saying in many management circles is, "You don't get what you deserve, but rather what you negotiate." The same appears to be true in the large number of managed-care contracts that healthcare providers negotiate with health plans. The contract terms are especially important to most healthcare providers because favorable terms here often spell the difference

between financial success or failure. For most healthcare providers, there is no opportunity to negotiate terms for Medicare and Medicaid payment. The terms are fixed and are made on a take-it-or-leave-it basis. The magnitude of patient volume in these two payer categories makes it a must for most providers. The real opportunity comes in negotiation of nongovernment payer terms.

We have provided four measures for contract negotiation assessment. Collectively, these measures help assess any possible weakness in current contract terms. The first measure is **nongovernment payers' percentage** and represents the percentage of revenues not derived from Medicare or Medicaid patients. A high number indicates greater relative importance of effective contract negotiation. Harris has a relatively high percentage of nongovernment payers (34.4%) relative to Eastside (27.9%) and the U.S. average (23.9%).

Harris has a lower **mark-up ratio** relative to both its competitor and the U.S. average. Because prices at Harris are below those of its competitor, the lower mark-up ratio is understandable. Most troubling for Harris, though, is that even with these lower charges the **deduction percentage** measure is higher. Deduction percentage shows the amount of contractual allowances deducted from gross charges. A lower percentage is clearly more desirable because additional net revenue would result with the lower value. Negotiating net payment closer to charges would reduce this value. Clearly, Eastside has an advantage because it has higher charges and lower deductions.

To summarize many of these elements we see, on a per patient basis, that Harris has a lower average payment through the **net patient revenue per equivalent discharge™** metric. This metric divides net patient revenue by equivalent discharges, which is a value meant to replace adjusted discharges for total patient volume. Problems with adjusted discharge metrics, which are common in hospital benchmarking, are described in the next section. The equivalent discharge™ (equivalent patient unit) methodology is further described in *Healthcare Financial Management* March 2011 issue titled, "A better way to measure volume and benchmark costs." The value for Harris suggests that payment per patient encounter is lower than the national average and significantly below Eastside. Four factors will influence this metric: payer mix, payer terms, pricing, and patient service utilization. We have seen issues in three of these factors: high Medicaid patient mix, low prices, and charge capture issues would all drive down average payment. What can also be suggested is that contract terms could also be an issue, given that Harris has more market share and more nongovernment patients but significantly lower average payment levels.

Conclusions reached from our review of contract negotiation factors are:

- Harris does have lower average payment per patient encounter due, in part, to higher Medicaid and lower pricing and charge capture.
- Renegotiation of commercial contract terms to higher rates could be possible given its lower prices and higher market share.

Learning Objective 7

Introduce the hospital cost-index measure.

Cost Position: A Different Approach

We have already seen that Harris has lower relative revenue levels than Eastside. Still, the hospital has had good financial performance. What is the explanation? Costs must be a bright spot for the organization. To better assess relative cost positions, we can introduce a construct for reviewing total hospital cost. This construct is further described in a July 2002 article published in *Healthcare Financial Management*, "The hospital cost index: A new way to assess hospital efficiency." **FIGURE 11-3** provides a schematic of the methodology. Most hospitals currently use an adjusted-discharge or adjusted-patient-day output measure

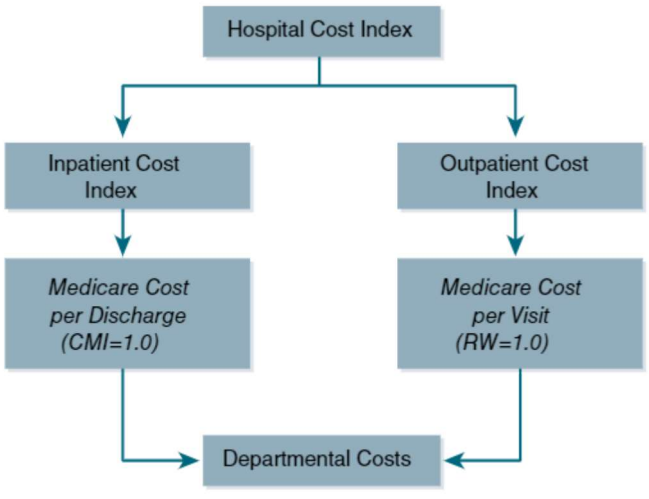

FIGURE 11-3 Analysis of Overall Cost

to compare costs on a per unit basis. We believe the adjusted output measures are flawed for reasons we discuss next.

Problems with Adjusted-Discharge Measures of Cost

Most U.S. hospitals can divide their patient operations into inpatient and outpatient areas. Gross patient revenue is often subdivided along these lines. In the last 25 years, outpatient activity has gone from under 20% in most hospitals to close to 50% in 2008. This dramatic increase in outpatient revenue has caused more individuals to question the validity of incorporating outpatient activity into a consolidated measure of cost, using adjusted discharges or adjusted patient-days.

The critical measurement concept in an adjusted discharge or day measure is the weighting for outpatient revenue. The usual methodology for defining adjusted discharges or days is expressed as a formula:

$$\text{Adjusted discharges (days)} = \text{Inpatient discharges (days)} \times \left[1 + \frac{\text{Gross outpatient revenue}}{\text{Gross inpatient revenue}}\right]$$

Procedure Pricing

The computation of adjusted discharges is heavily influenced by specific procedure prices in the hospital's charge description master (CDM). Some hospitals may price procedures with high outpatient utilization at higher levels to take advantage of the greater presence of "percentage of billed charges" payment arrangements. Other hospitals may keep high outpatient procedures at lower levels because of a large self-pay presence, implying greater price elasticity. Some data suggest that the majority of hospitals overstate outpatient costs because of higher procedure prices. If this is so, hospitals with heavier percentages of outpatient activity or higher outpatient prices would have larger values for adjusted discharges and, therefore, lower costs per adjusted discharge. This may partially explain why smaller hospitals, which often have greater percentages of outpatient revenue, have lower costs per adjusted discharge.

Output Differences

Another major factor that affects the comparability of cost measures using an adjusted-discharge basis is output differences. Even if there were only inpatient discharges and no outpatient activity, discharges would not be an ideal measure to make comparisons of cost across hospitals because of case-mix differences. Many cost-per-adjusted-discharge measures are further adjusted by dividing by the case-mix index of the hospital for the time period. There are two alternative case-mix indexes that are often used:

- All-payer case-mix index
- Medicare case-mix index

Obviously, the all-payer case-mix index will do a better job of reflecting output differences than will a Medicare-only case-mix index. There is one major issue, however, with the utilization of all-payer case-mix-index adjustments. You may be able to adjust your cost for case-mix effects, but will the external comparative cost measures be adjusted in similar fashion? Competitor data extracted from public-use files such as Medicare Cost Reports will not have all-payer case-mix-index values. For controlled subscriber-based benchmarking services, the all-payer case-mix-index adjustments may be accurate, but the comparisons will be limited to other subscribing hospitals and will exclude specific competitor comparisons.

For the above reasons, Medicare case-mix-index adjustments are often utilized in a number of comparative reports. In many cases, the Medicare case-mix index can remove cost variance and better isolate possible problems. The Medicare case-mix-index adjustment will be an issue, however, when the non-Medicare patient population differs dramatically from the Medicare patient population. For example, a hospital that specialized in orthopedics and obstetrics would present problems. Using the Medicare case-mix index would grossly overstate case-mix complexity because all of the obstetric cases, which would be lower case weighted, would be non-Medicare.

Geographical Cost-of-Living Differences

The final area affecting the comparability of cost-per-adjusted-discharge (CPAD) measures is geographic cost-of-living differences. Hospitals in Oakland, California, have higher operating costs than do hospitals in rural North Dakota. The usual method of adjustment is to divide the unadjusted cost measure by the local area cost-of-living index. This division would restate costs into a cost-of-living index equal to 1.0. The wage index used by Medicare is the most often-used index and may be applied to total cost or some percentage of total cost. The rationale for a percentage is that some portion of hospital costs, for example, supplies, may not be affected by cost-of-living differences. Medicare assumes that the wage index affects 71% of total cost. The remaining 29% is presumed to be unaffected by wage variation.

Cost-of-living differences are important, and the adjustments can be easily handled. Of the three problems affecting cost comparability (procedure pricing, output differences, and geographical cost-of-living differences), cost-of-living differences can be resolved. The problems with procedure pricing and output differences are still present in a CPAD measure, even after case-mix indexes have been applied.

Hospital Cost Index® (HCI)

We believe that a better measure of facility-wide hospital costliness can be constructed by weighting two measures:

1. Medicare cost per discharge, case-mix and wage-index adjusted (MCPD)
2. Medicare cost per outpatient visit, relative value unit and wage-index adjusted (MCPV)

The HCI is then constructed as follows:

$$\text{HCI} = \%\,\text{Inpatient revenue} \times \frac{\text{MCPD}}{\text{U.S. median}} + \%\,\text{Outpatient revenue} \times \frac{\text{MCPV}}{\text{U.S. median}}$$

Medicare Cost per Discharge (MCPD) MCPD is a good reflection of inpatient cost. Data for computing this measure can be derived from the public-use files: MedPAR and Medicare Cost Reports. Each Medicare inpatient claim is costed using the relevant departmental ratio of cost-to-charge (DRCC) values derived from the Medicare Cost Report applied to charges from the inpatient claim. The DRCC values are mapped to specific revenue codes in the claims file. Finally, a wage index assigned to the hospital by Medicare is used to restate costs to an index of 1.0. This process results in a unique publicly available number for most hospitals in the United States.

The MCPD is not a perfect measure of relative inpatient costs, but we believe it is better than any other publicly available measure of cost or inpatient cost at the facility level for several reasons.

- The output unit is more comparable than any other.
- There is no application of outpatient-equivalent discharges to distort output similarity.
- The case-mix index used to adjust is specific to those patients and is not extended to non-Medicare patients.
- The cost measures are adjusted using department-specific cost-to-charge ratios, not facility-wide cost-to-charge ratios.
- The costs are adjusted for cost-of-living differences.

The major problem with MCPD is its comprehensiveness. In short, the measure may or may not be reflective of costs in other non-Medicare areas. We believe that this is not a major issue for the following reasons. First, Medicare represents the largest payer for most hospitals: approximately 54% of all inpatient-days. Second, with fixed payment per DRG, there is an incentive to keep costs low. If costs are high in the Medicare area, they will most likely be high in other non-Medicare areas.

Medicare Cost per Outpatient Visit (MCPV) We use MCPV to assess costliness on the outpatient side of hospital operations. We can construct this measure from public-use files (Medicare Outpatient Claims and Medicare Cost Reports), which makes its availability a reality for most U.S. hospitals. To derive the measure, we divide the cost per claim defined through the DRCC extensions by the relative value units of the claim. We estimate RVUs based on the taxonomy presented in **TABLE 11-4**.

TABLE 11-4 Determination of Relative Value Units

Line-Item Type	Relative Value Unit Assignment
APC	APC weight
Fee schedule	Fee schedule/national price per APC = 1.0
Pass-through drug and biologicals	Average wholesale price/national price per APC = 1.0
Pass-through device	Estimate payment/national price per APC = 1.0

APC, ambulatory payment classification.

We believe the introduction of the Medicare outpatient prospective payment system (OPPS) has provided an opportunity to adjust outpatient costs for relative value unit differences in a manner similar to case-mix-index adjustment on the inpatient side. We do not know of any other measure of facility-wide outpatient cost that incorporates relative value unit adjustment to this degree. Medical groups have used resource-based relative value scales (RBRVS) measure, but these were not applicable to hospital outpatient operations.

The MCPV is not a perfect measure of outpatient costliness. Like the MCPD, the MCPV does not necessarily reflect cost for non-Medicare patients. Medicare patients are, however, a significant percentage of total outpatient business. Medicare also pays on a fixed-fee basis now, so a strong incentive should exist to keep costs low. If costs are high for Medicare outpatients, it seems reasonable to conclude that they would be high for other categories.

Merging the MCPD and the MCPV The final step in the development of the HCI is to combine the MCPD and MCPV. To combine these two measures, we must weight them by the percentage of business activity. The MCPD is, therefore, multiplied by the percentage of inpatient revenue, and the MCPV is multiplied by the percentage of outpatient revenue. The total of inpatient revenue and outpatient revenue percentages should equal 1.0. Data for these values can be taken from Medicare Cost Reports.

The final step is to "normalize" the MCPD and MCPV around some central value. We use the current U.S. median values for both measures.

Overall Cost Factors

Using the three measures just described (HCI, MDPD, and MCPV), we can see from Table 11-1 that Harris is a lower-cost hospital with respect to both its primary competitor and the U.S. average. Harris's HCI is currently at 99.5, which is slightly below the U.S. average (101.2) and its primary competitor (107.2). However, the data does show us that Harris has a greater opportunity for cost reduction in the inpatient arena where its cost per discharge on a case-mix basis is above both its competitor and U.S. averages.

Labor Cost Factors

Healthcare providers in general and hospitals in particular are labor-intensive operations. More than 50% of their costs are connected to staffing. To analyze labor costs, we have selected two measures of productivity and one measure of compensation.

Collectively, the labor-cost measures communicate a mixed message. *Salary costs* at Harris are higher compared to U.S. averages and also high relative to its competitor. While some of the difference is due to higher physician employment at Harris, the sizable gap should be explored further.

Labor productivity at Harris is better on both measures when compared to its competitor. The two productivity measures (**net patient revenue per FTE** and **man-hours per equivalent discharge™**) show that Harris generates more revenue dollars with fewer full-time-equivalent employees and/or employee hours.

Conclusions reached from our review of labor cost factors are:

- Compensation costs appear out of line with U.S. averages and those of its competitor. Harris should explore department-specific compensation standards to ensure appropriate payment levels.
- Labor productivity appears to be better than competitor values.

Departmental Cost Factors

We have included four measures of departmental cost:

1. Nursing cost measures
   a. Direct cost per routine day
   b. Direct cost per ICU/CCU day
2. Overhead measures/adjusted patient-day
   a. Capital-related cost per equivalent discharge™
   b. Overhead cost percentage

Direct routine nursing costs are below Eastside's values in the routine and ICU/CCU areas. These cost measures include only the direct cost of the department and do not include overhead allocations. The cost data are extracted from filed Medicare Cost Reports.

The two overhead measures of cost suggest some inefficiency. Harris appears to have higher **overhead costs** (costs in nonrevenue-producing departments) than Eastside. In addition, Harris has higher **capital costs** (investment in equipment and facilities) when compared to Eastside and the U.S. median. These areas should be targeted for further review.

Conclusions reached from the review of departmental cost factors are:

- Harris has lower direct nursing costs per day. This is a result of increased productivity as there appears to be higher salaries.
- Overhead costs at Harris are high, especially in the capital-related area.

Supply and Drug Costs

Supply and drug costs can be significant factors for a large number of medical and surgical procedures. The magnitude of total supply and drug costs is complicated because of the underlying factors that influence cost. Total supply and drug costs are a product of quantity used and price paid. Lower costs can be realized by either reducing the intensity of usage or reducing the price paid. The issue is often complicated by physician preferences. Healthcare executives can attempt to influence physician behavior in supply or drug selection, but ultimately, the physician will determine which drug or supply item will be used and in what quantity.

We have provided four measures of inpatient supply and drug costs. Two of these measures define supply costs for MS-DRGs whose supply costs are usually sizable:

- MS-DRG 247—Percutaneous cardiovascular procedure with drug-eluting stent w/o MCC
- MS-DRG 470—Major joint replacement or reattachment of lower extremity w/o MCC

Both measures indicate that Harris has costs much lower than U.S. averages and also much lower than competitor values. While the variance exists, the explanation is not clear without further review. Possible explanations could be:

- Better negotiated purchase contracts, which result in lower prices
- Use of less expensive supply items by physicians
- Quantity of medical supplies used throughout the patient encounter

Two MS-DRG drug-cost measures are also reviewed:

- MS-DRG 194—Simple pneumonia and pleurisy w CC
- MS-DRG 603—Cellulitis w/o MCC

Harris appears to have higher drug costs than the U.S. average and its competitor. The underlying issues exist in higher rates for the drugs either due to contracted price or physician selection and/or higher quantity of drugs used.

Conclusions reached from our review of drug and supply costs are:

- Drug costs appear to be high compared to its competitor and national data.
- Review of drug costs with the pharmacy department and selected physicians should be undertaken with the desired outcome of drug price reductions and usage standardization.

Service Intensity

Service intensity is a critical driver of healthcare cost. Cost per encounter of service can be defined as:

$$\frac{\text{Services}}{\text{Encounters}} \times \frac{\text{Inputs}}{\text{Services}} \times \text{Prices of resources}$$

Each of these three factors will drive total healthcare costs. The first term (services/encounters) is referred to as **service intensity**. The two major drivers of service intensity for inpatient care are **length of stay** and **ancillary service usage**. We have, therefore, included two measures to help assess service intensity:

- Medicare length of stay, case-mix-index adjusted
- Medicare ancillary cost per discharge, case-mix-index adjusted

Both of these measures are taken from Medicare data and are case-mix adjusted to 1.0. The use of these measures assures that there will be comparability across hospitals because the measures are "apple-to-apple" comparisons

Harris has a low length of stay on a case-mix-adjusted basis when compared to the U.S. median. Its value, however, is above its primary competitor's. Its low length of stay is a reason its cost per discharge is comparable to the national average.

Ancillary costs are above U.S. averages and warrant review. Prior discussion has already disclosed high prices paid for drug items. This is most likely the cause for the variance. It should also be noted that a higher length of stay, relative to Eastside, may also affect the ancillary cost comparison.

The conclusion reached from our service intensity review is:

- Harris has significant opportunity for ancillary savings. Higher drug costs, as seen previously, may explain a sizable portion of the difference.

Nonoperating Income

Many not-for-profit healthcare providers, especially hospitals, derive a large percentage of their total net income from nonoperating sources. The usual source of nonoperating income for most hospitals is investment income. Data show this to be especially true for Harris. (See Appendix 9-A.)

We have defined three measures to assess performance in the nonoperating income area:

1. Days cash on hand
2. Investment yield
3. Portfolio in equities

Harris has a very sizable investment in securities, as seen from its **days cash on hand** (DCOH) value of 236 days. Only investments that are not restricted by donors or third parties are included. This explains why trustee-held funds ($51,038) and donor-restricted funds ($84,440) are excluded. DCOH measures the number of days an organization could continue to operate given its current level of cash and operating expenses.

Harris also has a very sizable percentage of its investment in equities: 58.7%. This high percentage of equity investment can increase yields, but risk is also increased. Investment income includes both interest and dividend income, as well as realized gains or losses on securities sold during the period.

Conclusions for Harris with respect to its investment portfolio are:

- Review current investment strategy and perhaps place equity investment in funds that replicate broad market segments such as the Standard and Poor's 500 or the Wilshire 5000.
- Determine if Harris is willing to assume the relatively high risk of equity investments or whether a reduced reliance on equity funds is more consistent with projected needs for these funds.

Investment Efficiency Factors

As discussed earlier in this chapter, it is not the amount of profit realized that is of prime concern but rather the amount of profit in relation to investment. For most healthcare providers, the three critical areas of control are plant, property, and equipment; accounts receivable; and inventory. To assess performance in these three areas, we have defined three measures that assess the productivity of investment:

1. Days in accounts receivable
2. Inventory to net patient revenue
3. Revenue to net fixed assets (fixed asset turnover)

Harris has good investment productivity with respect to both accounts receivable. High values for *receivables* can be the result of many factors but, in general, result from three primary causes:

- Payment delays by payers, especially commercial health plans
- Large balances of old accounts whose collection is suspect
- Billing delays that prevent prompt invoicing of provided care

However, the very low number of days in accounts receivable could also present a problem for Harris. At times, collections managers may close delinquent accounts and write off the claim balance to bad debt. At times, managers are incentivized to keep days in accounts receivable low, and this action could prohibit collection from accounts that would pay if given more time.

Harris appears to have excess *investment in net fixed assets*. It currently generates 1.42 of operating revenue per dollar of investment in net fixed assets compared to a U.S. average of 2.45 and a competitor value of 2.93. Determining the desired level of investment in fixed assets is not an easy decision and is heavily influenced by a large number of stakeholders in the firm, including doctors, board members, employees, and the community. **Long-term investment** levels in property and equipment are often a part of the firm's strategic plan and reflect perceived community needs as well as financial and marketing objectives. Many not-for-profit healthcare executives often forget that capital has a real cost and excessive fixed-asset investment can impair the firm's long-term financial viability.

What is the potential cost of Harris's excessive investment in fixed assets? There are several ways that this could be measured. First, we could isolate the direct costs of the excessive investment in terms of depreciation and interest expense. Second, we could impute some opportunity cost of the excess investment, using the expected yield on alternative investments. Third, we could multiply the firm's estimated cost of capital times the excess investment.

To determine the amount of excess investment in fixed assets, we need a target revenue to fixed assets standard. For this purpose, let's use the U.S. median of 2.45. The desired level of investment in fixed assets would be:

$$\frac{\text{Operating revenue}}{\text{Target revenue to fixed assets}} = \frac{\$800,209}{2.45} = \$326,616$$

Harris has $236,733,000 in excess investment ($563,349,000 – $326,616,000). This surplus investment represents 42% of Harris's present investment in net fixed assets. Assuming that 42% of the firm's depreciation and interest is not necessary produces one estimate of annual cost:

$$0.42 \times (\$44,392,000 + \$10,974,000) = \$23,253,720$$

Alternatively, we could assume a possible yield on risk-free investment of 6.0% as our opportunity cost. This would produce an annual savings of $14,203,985 (0.06 × $236,733,000).

No matter what method of cost savings is used, Harris has a heavy cost associated with its excess investment in fixed assets. Much of this surplus is a direct result of intense physician pressure to finance new investment in clinic facilities to support the integrated network of services provided by Harris.

Conclusions reached from our investment efficiency review are:

- Receivables are low at Harris, primarily due good management. However, claims should be reviewed to ensure that accounts are not being closed too quickly.
- Fixed asset investment at Harris is $237 million above typical U.S. averages. This surplus investment could cost Harris somewhere between $14 million and $23 million annually. Tighter capital expenditure review policies need to be implemented to prevent this problem from getting worse.

Plant Obsolescence Factors

While excessive investment in fixed assets can impair the realization of reasonable return on investment, investment in old facilities and outdated technology can be fatal. If a healthcare firm, especially a hospital, has old and outdated facilities, it will likely affect the quality of care rendered to its patients. It may also lead medical staff to practice at facilities where they believe the welfare of their patients may be better served. We have defined two measures to assess the issue of plant obsolescence:

1. Average age of plant
2. Two-year capital expenditure growth rate

Harris has been spending more on fixed assets than U.S. averages in the last 2 years, a likely response to its significantly older plant age and to keep pace with Eastside's significant investments.

The conclusion regarding plant obsolescence is:

- Harris has made some large investments to keep up with current technology and has been replacing its current physical facilities and investing in new areas.

Capital Position

The last area of performance factors to be reviewed is capital position. Successful firms have profitable operations with reasonable levels of investment. They also keep their cost of financing at a reasonable level. Capital funds in any firm are provided from either debt or equity, and each has a cost. Debt has an explicit cost that can be easily determined by either examining current financing documents or obtaining present bond market yields. Debt also affects the cost of equity capital. Higher levels of debt or financial leverage increase the risk of business failure and lead to higher required returns for invested equity capital, irrespective of its source. A religious, government, community, or investor-owned firm must obtain higher returns on its equity as it raises the level of risk through increased borrowing. We have identified five measures of capital position:

1. Debt financing percentage
2. Long-term debt-to-equity percentage
3. Average cost of equity percentage
4. Cash flow to debt percentage
5. Debt service coverage

Harris has a reasonable overall level of liabilities with 47.5% of its assets financed through current and long-term debt. This value is consistent with the U.S. average but is well above Eastside. Of more concern, however, is the higher long-term debt to equity percentage. Harris has borrowed extensively to finance its capital investment program but has also used its extensive capital reserves. This increased debt has raised the cost-of-equity capital. Harris's cost-of-equity capital is explained in **FIGURE 11-4**. The cost of a firm's equity increases as debt financing rises, but the firm's weighted cost of capital may not increase. Weighted cost of capital is defined as:

$$\{[\text{Long-term debt} / (\text{Long-term debt} + \text{Equity})] \times \text{Interest rate on debt}\} + \{[\text{Equity}/(\text{Long-term debt} + \text{Equity})] \times \text{Cost of equity}\}$$

$$\{[493{,}597 / (439{,}597 + 684{,}619)] \times 5.1\%\} + \{[684{,}619 / (439{,}597 + 684{,}619)] \times 10.2\%\} = 8.2\%$$

Harris has increased its debt position. Most of its debt is variable rate, with average rates running less than 1%. We have chosen to use a 5.1% rate on debt, which better reflects what Harris would pay on non-variable-rate debt, and also aligns with the organization's true borrowing rate when the effect of swap agreements is factored.

Conclusions regarding the capital position of Harris are:

- Harris has growing levels of debt.
- Its ability to meet debt-service obligations is excellent.

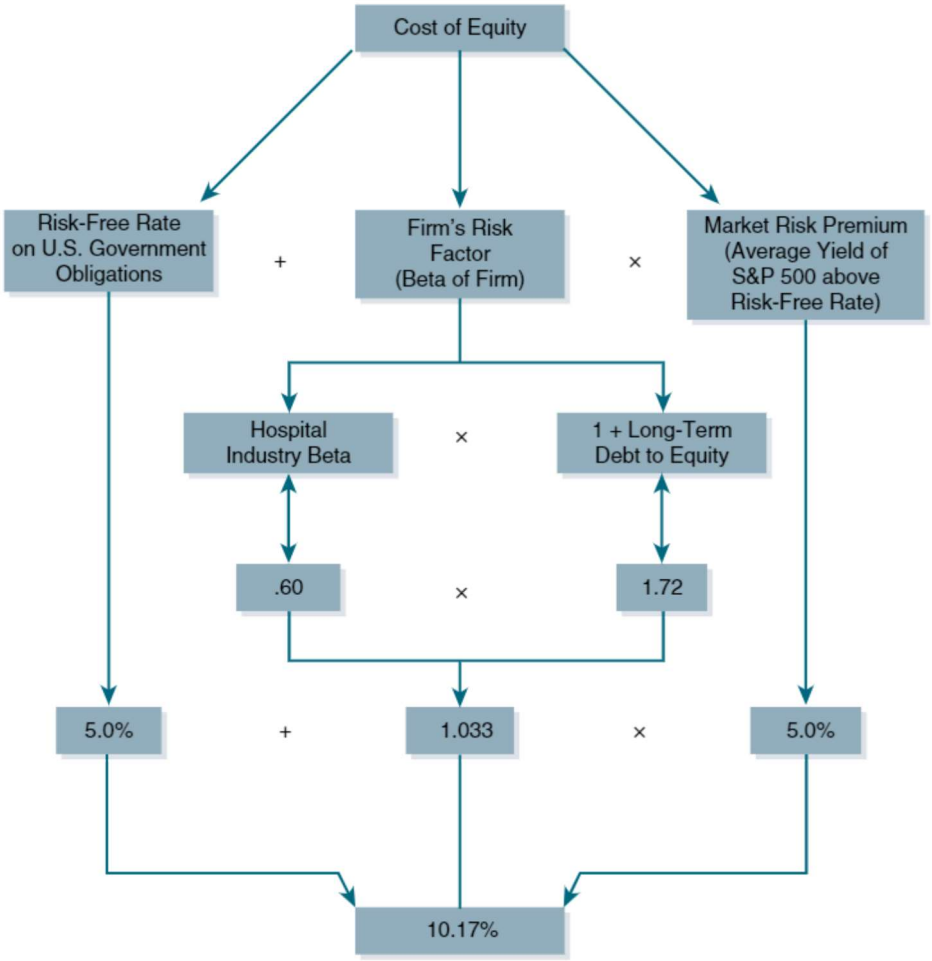

FIGURE 11-4 **Harris's Cost of Equity**

SUMMARY: HARRIS CASE

Our financial review of Harris suggests possible improvements in profitability. Most of the opportunity for profit enhancement at Harris will likely be related to both revenue and cost issues. Areas identified for improvement include the following:

- Harris has lower inpatient and outpatient charges, and higher market share. Harris should use this position to negotiate better contracts with major payers and implement a modest price increase to generate additional revenue.
- Decreasing case-mix index should be monitored and addressed, as well as charge capture opportunities in the outpatient area.
- Hospital costs are reasonable but appear to be higher for inpatient services. Higher inpatient ancillary costs, especially in pharmaceuticals, could be driving this finding.
- Harris appears to be strong financially, but has borrowed extensively to invest in its aging facility. Total plant investment appears to be high and utilized inefficiently.

The dashboard approach used in this case can be very helpful in focusing management attention on either potential problems or areas of opportunity. Ultimately however, management must make changes. The best dashboard design, combined with accurate and timely reporting and without actual management intervention, will accomplish nothing.

ASSIGNMENTS

1. Operating margins in your hospital have been consistently below national norms for the past 3 years. Discuss the factors that might have created this situation and the ways in which you might determine specific causes.
2. Your firm reported net income of $5,000,000, but the change in equity was only $3,000,000. What could account for this difference?

3. Determine the amount of incremental profit that would be realized with a 10% across-the-board rate increase at Thunderbird Hospital. Thunderbird's present payment composition is 80% fixed fee and 20% charges or discounted charges. Present operating income is defined below:

Gross patient revenue	$100,000,000
less Contractual allowances	40,000,000
Net patient revenue	$60,000,000
less Expenses	59,000,000
Operating income	$1,000,000

4. You have been reviewing documentation in your medical records department for the last week and have discovered a potential issue with respect to documentation for MS-DRG 193 (Simple Pneumonia & Pleurisy w MCC) and MS-DRG 194 (Simple Pneumonia & Pleurisy w CC). You have discovered 20 cases that were coded as MS-DRG 194, when in fact these patients did have diagnosis to support the major comorbidity and complication assignment. If the hospital's base payment rate for a case weight of 1.000 is $5,000, determine the incremental payment the hospital would have received. Assume the case weight for is 1.000 for MS-DRG 194 and 1.4378 for MS-DRG 193.
5. Your firm's investment portfolio was valued at $100,000,000 at the beginning of the year. Approximately 60% of the portfolio was invested in fixed-income securities, primarily U.S. government bonds. The remaining 40% was invested in mutual funds selected by your firm's portfolio manager. During the year U.S. government bonds yielded 6.0%, and the change in the Standard and Poor's 500 index was 10.0%. Reported investment income during the year was $6,000,000 including realized gains. The firm also reported an unrealized loss of $1,000,000. Total yield on the portfolio was thus $5,000,000. What value would you have expected given the facts above?
6. Your present length of stay on Medicare patients is 6.3 days for 2,000 Medicare admissions. This value is unadjusted for case-mix effects. You have discovered that a normal length of stay should have been 5.0 days. If this level had been realized, you would have had 2,600 fewer days of care for Medicare patients. You are trying to determine the amount of actual savings that would be realized if the shorter length of stay could be achieved. You have been told that a shorter length of stay would affect only direct costs of nursing. Your present direct cost of nursing per day is $300. Some of this cost is considered fixed and would not be changed. If 60% of the nursing cost were considered variable, how much saving would be realized through the length of stay reduction?
7. Charles S. Lewis has just been named the CEO of Community Hospital, a 230-bed hospital located in an agricultural community of approximately 150,000. There is one other similar-size hospital in the community. C.S. Lewis has been told by his CFO, J.R. Tolkien, that the hospital is in excellent financial condition, but Lewis is not convinced. He has requested and received summary financial statements presented in **TABLE 11-5**. You have been asked to help Mr. Lewis identify the trends in financial position for the hospital in the last 5 years. Please compute the values for the financial ratios described in Chapter 10 and provide Lewis with your assessment of Community Hospital's financial position.

TABLE 11-5 Summary Financial Information Community Hospital* 20X3–20X7 (data in thousands)

	20X3	20X4	20X5	20X6	20X7
Balance sheet accounts					
Cash and cash equivalents	$34,402	$30,444	$45,848	$46,010	$73,711
Patient accounts receivable	39,506	38,878	35,444	38,853	35,647
Inventory	2,133	2,318	2,398	3,197	3,279

(continues)

TABLE 11-5 Summary Financial Information Community Hospital* 20X3–20X7 (data in thousands) *(continued)*

	20X3	20X4	20X5	20X6	20X7
Gross fixed assets	187,278	221,548	240,988	256,652	276,458
Accumulated depreciation	73,227	79,523	89,324	101,007	113,851
Net fixed assets	114,051	142,025	151,664	155,645	162,607
Unrestricted capital funds	10,720	13,625	20,160	25,615	17,716
Total assets	$238,365	$265,784	$276,965	$287,193	$311,140
Current maturities of LTD	111	1,794	1,431	2,211	1,143
Current liabilities	$37,426	$38,492	$33,240	$31,699	$35,862
Long-term debt	2,032	12,821	11,720	9,578	9,570
Net assets	$188,743	$204,262	$222,606	$237,022	$251,241
Income Statement Accounts					
Net patient revenue	$208,861	$225,950	$244,976	$257,784	$282,461
Other revenue	1,569	1,756	1,929	2,170	1,757
Total operating revenue	$210,430	$227,706	$246,905	$259,954	$284,218
Total operating expenses	$203,043	$219,768	$233,867	$254,382	$278,629
Operating income	7,387	7,938	13,038	5,572	5,589
plus Nonoperating revenue	6,806	7,579	8,971	8,430	8,696
Excess of revenue over expenses	$14,193	$15,517	$22,009	$14,002	$14,285
Depreciation	$10,588	$11,161	$11,659	$12,184	$12,524
Interest	115	611	471	419	392

* Note that not all asset and liability items are shown. The totals do not, therefore, foot to the individual account values.

SOLUTIONS AND ANSWERS

1. Low operating margins are the result of either low prices or high costs. Low prices may be difficult to change in either competitive markets or situations involving high percentages of fixed-price payers, such as Medicare. High costs may result from excessive length of stay, poor productivity, or high salaries.
2. A transfer of funds from the entity may have taken place. This is often the case in investor-owned companies, because of the payment of dividends. It also may occur in a voluntary entity because of corporate restructuring. Unrealized losses on the firm's investment portfolio may have occurred.
3. The amount of incremental profit is equal to:

$$\text{Percentage of charge patients} \times \text{Price increase} \times \text{Present gross patient revenue}$$

   The increase in charges is $10,000,000, or 10% times $100,000,000. Of that amount 20%, or $2,000,000, will be to charge or discounted-charge payers.
4. The difference in payment would be 20 patients × $5,000 × (1.4378 – 1.000), or $43,780.
5. The expected yield should have been $7,600,000:

$$\text{Expected fixed-income yield} = \$60{,}000{,}000 \times 6.0\% = \$3{,}600{,}000$$
$$\text{Expected equity yield} = \$40{,}000{,}000 \times 10\% = \$4{,}000{,}000$$

6. The estimated savings would be:

$$\text{Days saved} \times \text{Direct cost of nursing} \times \text{Variable cost percentage}$$
$$(2{,}600 \times \$300 \times 60\%) = \$468{,}000$$

7. Only selected financial ratios for Community Hospital can be calculated for the period 20X3 through 20X7. These values are shown in **TABLE 11-6**, which presents a number of financial ratios. Major observations that would result include the following:
   - Present financial position at Community Hospital is strong. Current financial strength is a result of two primary factors: minimal levels of long-term debt and above-average total margins.
   - The trend in margins is downward, however. The primary cause is an erosion in operating-income levels. Expenses have been growing more rapidly than revenues since 20X5.

TABLE 11-6 Selected Financial Ratios

	20X3	20X4	20X5	20X6	20X7
Overall					
ROE %	7.5	7.6	9.9	5.9	5.7
Total margin %	6.5	6.6	8.6	5.2	4.9
Financial strength index	2.2	1.9	3.1	2.2	2.3
Nonoperating Income					
Days cash on hand	86	77	108	108	125

(continues)

TABLE 11-6 Selected Financial Ratios *(continued)*

	20X3	20X4	20X5	20X6	20X7
Investment Efficiency					
Days in accounts receivable	69	63	53	55	46
Revenue to net fixed assets	1.9	1.7	1.7	1.7	1.8
Plant Obsolescence					
Average age of plant	6.9	7.1	7.7	8.3	9.1
Capital Position					
Debt financing %	20.8	23.1	19.6	17.5	19.3
Cash flow to debt %	49.9	43.4	61.9	52.2	44.8

CHAPTER 12

Financial Analysis of Alternative Healthcare Firms

LEARNING OBJECTIVES

After studying this chapter, you should be able to do the following:

1. List some of the major nonhospital and nonphysician sectors of the healthcare industry.
2. Discuss the sources of revenue for the nursing home industry.
3. Discuss the major sources of revenue and expenses of medical groups.
4. List and describe the major organizational types of physician groups.
5. Describe alternative HMO organizational arrangements.

REAL-WORLD SCENARIO

Laura Rose has recently been appointed to the Board of ElderCare, a large, for-profit operator of skilled nursing facilities (SNFs) around the country. Rose's first committee assignment is to the Treasury Committee because of her prior business experience. Although Laura had extensive experience as a hospital administrator, she had relatively little familiarity with the SNF industry. Upon reviewing ElderCare's recent financial statements, she was concerned about the dramatically declining financial position. She noticed that revenues were declining on per facility and per patient bases. Meanwhile, the company's debt had been downgraded and its borrowing costs had risen substantially.

She is aware that Medicare and Medicaid establish fixed fees that they reimburse SNF providers. Payment increases by Medicare and Medicaid have not kept pace with increases in costs in recent years. She wonders whether this might be a factor in the company's financing issues. In general, profitability in the long-term care industry has declined significantly in recent years, and several industry leaders had filed for bankruptcy protection. While some believe that the SNF Prospective Payment System (PPS) was largely to blame, other factors, such as ill-advised acquisitions, excessive long-term debt, and poor balance sheets, probably contributed as well. In

Opener image: © A1Stock/Shutterstock

essence, she is unsure whether ElderCare's financing difficulties are unique to management issues at ElderCare or whether they reflect more general market conditions and economic and reimbursement trends.

To understand the issue better, Rose needs to be able to estimate the direct financial impact of SNF reimbursement. She asked the ElderCare treasury and controller's office staff to prepare an analysis of the financial performance of selected long-term care facilities over the period 2012 to 2016. In particular, she wants to know how SNF bond ratings have been affected by PPS and what other factors might have contributed to the industry's deteriorating financial performance.

Previously, we discussed the measures and concepts of financial analysis in some detail, but most of the examples and industry standards were from the hospital sector. (See Chapter 11.) The hospital industry is by far the largest sector in the healthcare industry, but it is not the only sector; its rate of growth in recent years has been slower than in other areas. This chapter will provide some additional information about alternative healthcare firms.

Learning Objective 1

List some of the major nonhospital and nonphysician sectors of the healthcare industry.

First, we will discuss the financial characteristics of the following three specific alternative sectors:

1. Nursing homes
2. Medical groups
3. Health plans

It is impossible to describe all of the specific operating characteristics for these three sectors in one chapter, but we will try to highlight the important differences that affect financial measures. It is important to remember that the financial measures and concepts discussed previously are still applicable. (See Chapter 11.) For example, the concept and measurement of liquidity is the same for a hospital as it would be for a health plan. However, operating differences between health plans and hospitals will produce different values and standards. Health plans have much lower days in receivables than do hospitals, and are required to carry much higher cash balances to meet transaction needs, namely claims payment.

It is not just the higher relative growth rates of nonhospital sectors that cause us to separately examine the topic of financial analysis for alternative healthcare firms. Many of the alternative healthcare firms have been consolidating through both horizontal and vertical mergers and have now become major corporations in our nation's economy. For example, UnitedHealth Group, Aetna, and Anthem are among the largest corporations in the country, employing large numbers of people and absorbing significant amounts of capital to finance their continued growth. Much financial analysis and discussion are now devoted to these firms because of their almost continuous need for financing. Major brokerage houses now have analysts who devote their time to narrow sectors of the healthcare industry, such as home health firms or medical groups.

TABLE 12-1 presents 2015 financial ratio medians for two of the three sectors, along with comparative values for the investor-owned hospital-industry sector. We have calculated ratio averages by computing the ratio average for three large publicly traded firms in each industrial group. **TABLE 12-2** shows the composition for each of the three groups.

Long-Term Care Facilities and Nursing Homes

It is not always clear what types of firms individuals are referring to when they talk about the long-term care industry. For our purposes, we will be referring primarily to nursing homes, both skilled and intermediate-care facilities. The nursing home industry has experienced significant growth during the last decade, and expectations about the aging of America have led many analysts to project even more rapid growth in the future. Growth in the nursing home industry is inextricably linked to government payment and regulatory policy.

As of 2015, there were over 15,000 nursing homes in the United States, and of those, 68% were investor owned. Investor-owned presence in the nursing home industry is much larger than it is in the hospital industry, where only 17% of hospital capacity is investor owned. Many of the investor-owned nursing homes are part of large national chains, such as Kindred Healthcare. However, there still are many investors that may own as few as 1 or 2 nursing homes to as many as 20. Most of the large investor-owned chains became involved in the industry when the government started

TABLE 12-1 Financial Ratio Medians, 2015

Financial Ratio	Nursing Homes	Health Insurers	Hospitals
Liquidity			
Days in receivables	52	31	58
Days-cash-on-hand	44	124	21
Capital structure			
Debt financing percentage	53	41	88
Long-term debt to capital	35	49	86
Cash flow to debt percentage	16.3	13.1	12.2
Activity			
Total asset turnover	1.25	1.12	0.96
Fixed asset turnover	4.47	95.70	2.31
Current asset turnover	4.17	NA	4.41
Profitability			
Total margin percentage	2.87	3.64	4.57
Return on equity percentage	5.03	14.45	9.98

to finance a sizable percentage of nursing home care through the Medicaid program. Heavy government financing provided a stable source of payment that was not present before Medicaid.

Learning Objective 2

Discuss the sources of revenue for the nursing home industry.

Financing of nursing home care is a critical driver of nursing home supply as it is for most other healthcare sectors. **TABLE 12-3** summarizes sources of financing trends for nursing homes as of 2014.

The data in Table 12-3 reflect the dramatic increase in the percentage of nursing home financing that is derived from public sources and a corresponding reduction in private financing. The percentage of Medicare financing increased sharply in the first half of the 1990s as hospitals discharged more patients into nursing home settings to cut their costs per case and to maximize their profit per Medicare case. Much of this shift probably was related to the financial incentives created by the Medicare program when the government shifted to a per case payment system in 1983 for hospitals.

Although the federal government pays more than 50% of Medicaid nursing home costs, actual nursing home payments for Medicaid patients are set by the states. There is wide variation among the states between retrospective and prospective systems. In many states, there may be a mix of both systems. For example, capital costs may be paid on a retrospective basis, whereas all other costs may be paid on a prospective basis. Many states also use a case-mix-adjustment methodology to provide higher payments for nursing homes treating more severely ill patients.

Medicaid payments from states are usually the second largest state expenditure and, as a result, are subject to dramatic changes based on economic conditions in the state. When economic times are bad and

TABLE 12-2 Industry Composition, 2015

Industry/Firm	Stock Symbol	2015 Revenue (Millions)
Health insurance		
UnitedHealth Group	(UNH)	$157,107
Anthem	(ANTM)	$79,240
Aetna	(AET)	$53,789
Nursing homes		
Kindred Healthcare	(KND)	$7,055
Ensign Corp.	(ENSG)	$1,342
National Healthcare	(NHC)	$907
Hospitals		
Universal Health Services	(UHS)	$9,043
Community Health Systems	(CYH)	$19,437
HCA Holdings	(HCA)	$39,678

Reprinted from the Centers for Medicare and Medicaid Services

TABLE 12-3 Financing Percentages for Nursing Home Expenditures

	1990	2000	2010	2014
Private financing	54	46	40	40
Insurance	6	9	8	8
Out-of-pocket	40	32	27	27
All other	8	5	5	5
Public financing	46	54	60	60
Medicare	4	13	23	23
Medicaid	37	37	33	32
All other	5	4	4	5

Reprinted from the Centers for Medicare & Medicaid Services, National Health Expenditure Data. Retrieved July 6, 2010, from http://www.cms.gov.

states have a difficult time meeting their budgets, one of the areas usually affected is nursing home payments.

On a national basis the number of nursing home beds per 1,000 persons older than 85 was 282.9 in 2012, but great variations by state exist. The *Nursing Home Data Compendium 2013 Edition* published by the Department of Health and Human Services shows 10 states with values between 119 and 222 and 10 states with values between 375 and 491. Some states have used the supply of nursing home beds as a means to control state expenditures for nursing home care. Licensure laws and certificate of need (CON) have been the primary means for controlling the number of nursing home beds in most states. Rates of payment for Medicaid patients also serve as an indirect method of controlling nursing home capacity. As rates are held down, less capital becomes available for expansion and renovation. Major national nursing home chains have been known to sell all of their nursing homes in certain states where they believed that reasonable profits would be difficult to obtain because of restrictive state payment policies.

It is expected that demand for nursing home care will increase dramatically in the next 20 years as the baby boomers reach the age of 75 plus, which is the age at which nursing home demand peaks. Nursing homes are also diversifying and expanding their product lines. For example, many nursing homes are becoming **continuing care retirement communities (CCRCs)**. In a CCRC, there is a continuum of care that runs the gamut from independent living, to assisted living, to skilled care.

Continuing care retirement communities also have discovered that their resident populations are desirable targets for HMOs that are seeking to expand their Medicare risk contracts. The CCRC is in a strong position to market itself to a managed-care group because of the economies of scale provided from its continuum of care and its personal relationship to a Medicare population. At the same time, hospitals are looking for ways to expand their revenue base and have begun to develop skilled-care units and other subacute units that can expand their business along the continuum of care and compete with existing nursing homes. Increasing emphasis on "bundled payments" by both Medicare and Medicaid have also provided a strong incentive for hospitals and nursing homes to either merge or to establish affiliation arrangements. In many respects, some of the historical distinctions among healthcare industry segments are becoming blurred as vertical integration accelerates.

The financial statements in **TABLES 12-4** and **12-5** reflect the operations of Friendly Village, a church-owned CCRC. A review of these financial statements

TABLE 12-4 Friendly Village and Subsidiary Consolidated Balance Sheets

	June	
	2016	**2015**
Assets		
General funds		
Current assets		
Cash and cash equivalents	$228,693	$173,134
Investments (at cost-approximate market value of $293,000 in 2016 and $530,000 in 2015)	199,811	409,393
Cash and investments that have limited use	634,918	310,629
Receivable-Friendly Church entrance-fee fund	2,151,994	2,169,635
Resident and patient accounts receivable, less allowance for doubtful accounts (2016: $195,000; 2015: $115,000)	803,634	445,291
Mortgage escrow deposits	30,891	81,961
Inventories, prepaid expenses, and other assets	118,565	144,093
Total current assets	**$4,168,506**	**$3,734,136**
Assets that have limited use		
Cash and investments (at cost, which approximates market value)		
Under bond indenture agreement—held by trustee	$5,103,399	$662,217
Repair and replacement—held by trustee	283,179	355,392
Resident deposits	292,762	284,749
	$5,679,340	$1,302,358
Less cash and investments required for current liabilities	(634,918)	(310,629)
	$5,044,422	$991,728
Receivable-Friendly Church fee-fee fund, *less* portion classified as current assets	5,862,673	5,142,678
	$10,907,095	$6,134,406
Property and equipment, *less* allowances for depreciation	$13,312,799	$10,747,006

(continues)