CHAPTER

3

Accounting and Cash Flow Analysis

Learning Objectives

After reading this chapter, the student should be able to:

1. Explain basic accounting rules under the accrual principle, including how accrual results differ from results under cash accounting.
2. Interpret the individual items in financial statements.
3. Define major accounting terms.
4. Make simple bookkeeping entries.
5. Begin the study of financial statement analysis in Chapter 4.

Key Terms

Accelerated depreciation
Accounting cycle
Accrual principle
Asset
Auditors
Auditor's opinion
Balance sheet
Basic accounting equation
Budgeting
Cash flow statement
Certified Healthcare Finance Professional (CHFP)
Conservatism
Contra-asset
Cost of goods sold (CGS)
Credit
Current assets
Current liabilities
Debit
Deferred tax liability
Depreciation
Diagnosis-related group (DRG)
Fellow of the Healthcare Financial Management Association (FHFMA)
Financial accountant
Financial Accounting Standards Board (FASB)
Financial reporting
First in-first out (FIFO)
Footnotes
Full disclosure
Fund accounting
Generally Accepted Accounting Principles (GAAP)
Going concern
Government Accounting Standards Board (GASB)
Healthcare Financial Management Association (HFMA)
Historical costs
Income statement
Internal audit
Journal entry
Last in-first out (LIFO)
Liability
Managerial accountant
Modified accelerated cost recovery system (MACRS)
Monetary terms
Net assets
Owners' equity
Post
Straight-line depreciation
Systems design
Trial balance
Variance analysis

Financial management involves the selection, financing, and stewardship of an organization's assets. In practicing financial management, one's decisions must have a logical basis; they must be defensible. To find the course of financial action that maximizes the well-being of the organization's stakeholders, the manager has to calculate. He or she must look to the actual records of the organization to determine how things have worked in the past. He or she must calculate the potential effects of alternative courses of action. He or she must be able to determine the costs and benefits of possible actions through analysis of data.

This chapter and the remainder of Part Two, are about calculations. In this chapter the basics of financial accounting are explored, and accounting numbers are compared to figures based on cash flows. Accounting numbers and cash flow data

tell quite different stories about the financial health of any organization, and both are important for the financial decision maker. This chapter, although adequate to follow Chapter 4, is no substitute for serious study of accounting.

Accounting numbers such as revenue, expenses, net income, assets, liabilities, and owners' equity (which may go by several names in various health care organizations) are the "raw material" for financial decisions. It is in accounting records that the firm's transactions, and its cash inflows and outflows, are recorded. The only genuine record of the firm's financial health is in its accounting records and statements.

WHY LEARN ACCOUNTING?

Financial management is so dependent on accounting records that many people, including many financial professionals, believe that financial management *is* accounting. Many hospitals, for example, hire accountants, and only accountants, to perform their treasury functions. Although accountants have the "inside track" on the use of financial data (they are, after all, the experts in recording and summarizing those data), one need not be an accountant to make correct, careful decisions about selecting, financing, and caring for the firm's assets. However, every financial manager, and every manager who deals with financial decisions, must know at least the rudiments of accounting.

Accounting is, first, the language of business. Business records are kept by accountants. Organizations communicate their financial health to lenders, regulators, and potential partners in accounting terms. Ignorance of the difference between net patient revenue and net income can lead to terrible decisions. Accounting is a language that every manager needs to master.

Second, the clearest picture of the *past* financial health of the firm is that presented in its financial statements. The income statement, the balance sheet, and the cash flow statement provide, for the trained reader, detailed information about the firm's financial strength and success in previous periods. To read and understand financial statements, one must understand the accounting rules according to which they were constructed. Serious misinterpretations of financial health are inevitable for the reader who does not understand how the entries in the financial statements were calculated.

Finally, knowledge of financial accounting is important for the manager who is involved in cost analysis and budgeting. Virtually every manager, in health care and elsewhere, has to prepare a budget. To prepare a budget, the manager must know how his or her department's costs change over time and as service volume changes. Information about costs is embedded in accounting data on expenses. The manager who does not have at least a passing understanding of accounting has ceded leadership to the firm's accountants.

FIELDS OF ACCOUNTING PRACTICE

Just as health care managers specialize (in long-term care, hospitals, or medical group management), accountants specialize as well. Seldom does an accountant

perform the full range of accounting services, either for his employer or for clients. Rather, accountants, either in public practice or in private employment, tend to concentrate their attention in one of five areas: financial, managerial, auditing, tax, and systems.

The **financial accountant** is usually employed by an operating organization, such as a hospital or clinic. The financial accountant designs procedures for the recording of transactions, supervises that record-keeping function, and is responsible for summarizing those records in financial statements. An organization's financial accountants are responsible for the **financial reporting** function within the comptroller's department.

The **managerial accountant** (once known as the cost accountant) is also employed by an operating organization. Her job is to take information about the costs of doing business from the financial records. Once those cost data are captured, the managerial accountant analyzes them to find out how costs change with changing volume and how well management is doing at controlling costs. The managerial accountant plays important roles in **budgeting** and in **variance analysis.** Accountants employed by operating organizations are not required by law to achieve the Certified Public Accountant (CPA) designation (although some employers may require that designation for professional advancement). Those who wish can earn a special designation, Certified Management Accountant (CMA).

Auditors can work either for operating organizations or for public accounting firms. In public practice, auditors are charged with verifying that the firm's financial statements are prepared in accordance with **Generally Accepted Accounting Principles (GAAP).** Securities law requires that every organization whose shares are sold to the public at large have its financial statements audited. Lenders, third-party insurance carriers, and regulators also require audits of health care organizations' financial statements. An acceptable external audit can be made only by a CPA who has no financial ties to the organization he is auditing.

Many operating organizations, including most hospitals, have developed **internal audit** capability. The internal auditor's job is to ensure that adequate records, both financial and operating, are maintained to support the financial statements that the organization presents. The internal auditor tries to make sure that all of the assertions that the firm will make about itself are supported by documentation and that the financial accountant's record-keeping procedures are followed. The internal auditor may also be responsible for assuring that internal financial control procedures are followed. Internal auditors may be CPAs but need not be. Those who perform this function have developed a testing and certification program of their own, leading to designation as a Certified Internal Auditor (CIA).

Partially as a result of the growing importance of computers and of distributed data entry (many persons entering financial and other data at widely separated terminals), a growing field of accounting is **systems design.** The systems designer creates and installs computer hardware / software combinations to serve the needs of organizations' financial and managerial accountants. Most of those who practice accounting information systems design are consultants, offering their services to many organizations. Given the size of the health care industry, it is no surprise that several consulting firms provide those services exclusively to health care organizations.

Accounting (and other aspects of financial management practice) in health care organizations requires specialized knowledge. In recognition of that fact, the **Healthcare Financial Management Association (HFMA)** has established its own education and professional certification programs. A financial professional employed in a health care organization (or in related consulting and educational organizations) can seek designation first, as a **Certified Healthcare Finance Professional (CHFP),** and, later, as **Fellow of the Healthcare Financial Management Association (FHFMA).** Although many senior financial professionals in health care organizations do not hold them (and do quite well professionally), these designations are widely recognized as certifying high levels of professional training and competence.

ACCOUNTING PRINCIPLES:WHAT ARE THEY AND WHO MAKES THEM UP?

Modern financial accounting emerged from double-entry bookkeeping, the recording of transactions as self-balancing entries. Financial accounting, however, is more than merely making two book entries per transaction. It is based on a set of underlying principles, GAAP, that guide both the nature of the bookkeeping entries made and their interpretations.

An assumption that underlies all of financial accounting is that the entity (or organization or firm) is that of the **going concern.** That is, the entity is assumed to exist in the current time period and to continue to exist for the foreseeable future. One consequence of the going concern assumption is that the entity's assets and obligations must balance. The **basic accounting equation** must hold now and at all times in the future. The basic accounting identity is

Assets = Liabilities + Owners' equity

Assets are all of the things, tangible and intangible, that the entity owns. Most of those assets are tangible, such as beds, syringes, and cash on hand. Some of those assets, however, are intangible; they cannot be seen, touched, or picked up. Among intangible assets are goodwill, prepaid expenses, and accounts receivable. Assets that will cease to exist within one accounting period, usually a year, are **current assets.** Many current assets, such as accounts receivable, are intangible. However, inventory, a very tangible asset, is also a current asset. Cash, which may remain on hand for a long time, is also a current asset.

Liabilities are all of the items that the entity owes to others. Accounts payable (expenses already incurred but not yet paid), interest payable (interest expense incurred but not yet paid), and long-term debt are examples of the organization's liabilities. Liabilities that are due within the current accounting period, usually a year, are called **current liabilities.**

The difference between the value of the entity's assets and its liabilities is its **owners' equity.** Owners' equity is a residual account. There is nothing tangible that one can identify as belonging to the organization's shareholders, partners, or government. Owners' equity is also something of a fiction. In principle, it is what

the owners could claim were the entity to be liquidated. In fact, the market values of assets are seldom equal to the values at which they are recorded in the accounting records (their book values). There is no guarantee that owners could actually receive an amount equal to the owners' equity account balance.

In not-for-profit organizations and in government organizations, there are neither shareholders nor partners to claim the owners' equity account. As a result, that account is identified as the **net assets.** Until the early 1990s, that entry was called "fund balance," a term derived from the type of accounting that these organizations do, **fund accounting** (Seawell, 1992, Chapter 15; Hay & Wilson, 1992, Chapters 2–5).

The two sides of the fundamental accounting identity are usually called the **debit** side (left-hand side) and the **credit** side (right-hand side). The two terms have no meaning in this context other than left-hand and right-hand. There is nothing honorific associated with credit accounts and no negative connotation associated with debit accounts. One can rewrite the fundamental accounting equation as follows:

Debits = Credits

In order for the basic accounting identity to be met at all times, debits must equal credits for every transaction. Figure 3–1 shows how various transactions are classified as debits (abbreviated as *dr)* or credits (abbreviated as *cr).*

Another basic accounting principle is **conservatism.** Most assets should be valued conservatively, usually at their **historical costs.** When, for example, land is purchased and held for long periods of time, the value recorded in the asset accounts is not to be increased to show changes in the land's market value. Rather, the land remains on the books at its historical cost as long as it is there. Some assets whose market values are easily observable are exempt from this standard. Marketable securities (stocks and bonds, for example) are recorded at their current market value.

	Assets and Expenses	Liabilities, Owners' Equity, and Revenues
Increase	Debit	Credit
Decrease	Credit	Debit

Figure 3-1 Rules for debit and credit entries.

An accounting principle so basic that its importance is easily overlooked is that all information must be recorded in **monetary terms.** Some of the most interesting problems for financial accountants arise from the need to record not "one lightweight red pickup truck with an air conditioner and automatic transmission," but a monetary value.

Accounting reports may not conceal relevant information. If they did, they would not be useful to those who rely on them: investors, lenders, regulators, and internal management. Thus financial statements are to present a complete picture of the entity's financial position, "warts and all." That is, accounting statements must represent **full disclosure.**

The **accrual principle** requires that revenues be recorded in the period in which the associated service is performed, and that expenses be recorded in the period in which they are incurred, regardless of whether or not cash has changed hands. The accrual principle is intended to make financial accounting records show the flow of resources, rather than the flow of cash, through the entity. It also creates the need for such accounts as accounts payable and accounts receivable and requires the measurement of depreciation expense.

If some of the principles underlying financial accounting are controversial (the accrual principle introduces substantial room for ambiguity in the financial records), one must ask from whence those principles come. Who determines which organizations must adopt accrual accounting? Are the principles outlined above immutable, or do they and their interpretations change from time to time?

The principal rule-making body in financial accounting in the United States today is the **Financial Accounting Standards Board (FASB),** chartered for that purpose by the U.S. Congress in 1973 (Miller & Redding, 1988). The FASB took the standard-setting authority that had previously been exercised by the Accounting Principles Board (APB) of the American Institute of Certified Public Accountants (AICPA). Unless they have been specifically modified by the FASB, all AICPA-APB pronouncements remain in force.

Governmental entities, including health care organizations owned by agencies of government, are governed by another accounting group, the **Governmental Accounting Standards Board (GASB),** formed in 1984 (Hay & Wilson, 1992, pp. 1-6). The jurisdictions of the GASB and the FASB are not always as clearly defined as they seem, and conflicts of rules do occur (Garner & Grossman, 1991). Those organizations whose securities (stocks and bonds, other than municipal bonds) are sold to the public at large are also subject to accounting oversight by the United States Securities and Exchange Commission, a federal regulatory body (Pointer & Schroeder, 1986).

Current financial reporting standards require three basic financial statements. The **balance sheet** shows the balance between assets and liabilities plus owners' equity. The balance sheet shows a snapshot of the entity at the end of the reporting period.

The **income statement** (statement of profit and loss, operating statement, or statement of revenues and expenses) shows the revenues, expenses, and net income of the entity over the course of the reporting period. The income statement is like a videotape of the entity *calculated in accrual terms.* The **cash flow statement,**

on the other hand, shows the flow of cash into and out of the entity over the course of the reporting period. It is like a videotape of the entity *in cash flow terms.* The three statements, interpreted properly, tell much about the performance and the health of the organization for the reporting period.

An integral part of the accounting statements are the accompanying **footnotes.** These explain and elaborate such issues as the dollar value of uncompensated care, the method of calculating pension fund expense, and any pending legal actions that could generate liabilities in the future. A full analysis of the financial statements requires a careful reading of their footnotes.

THE ACCOUNTING CYCLE

Every transaction, every monetary or physical exchange, between the entity and the outside world generates two bookkeeping entries. That is the essence of double-entry bookkeeping. From those double entries come budget information, cost data, and, ultimately, financial statements for auditors' examination. The steps that lead from the original bookkeeping entries to financial statements constitute the **accounting cycle.** Figure 3—2 summarizes the accounting cycle.

The first step in the cycle is the **journal entry.** Equal debit and credit entries are made in the organization's general journal. Samples of those entries, for several key types of transactions, are illustrated in the next section. Entries in the general journal are the raw data for all further accounting calculations.

At regular intervals, perhaps daily or weekly, journal entries are **posted** to account ledgers. Computerized accounting makes automatic and instantaneous posting possible. Separate accounts are maintained for each major revenue and expense item and for each major class of asset, liability, and equity. Asset accounts, if a positive amount of the assets are held, have debit balances. A revenue account, if positive amounts of that revenue item have been received, has a credit balance.

After posting, a **trial balance is** computed. The trial balance is a test for the consistency and accuracy of the bookkeeping process. All of the debit account balances are totaled, as are all of the credit account balances. If the transactions have been recorded in the books properly, and if the posting process has been done accurately, the total of the debit balances will exactly equal the total of the credit balances.

At longer, but regular, intervals, the account ledgers are summarized in the three basic financial statements. At this point, the books must balance. That is, in

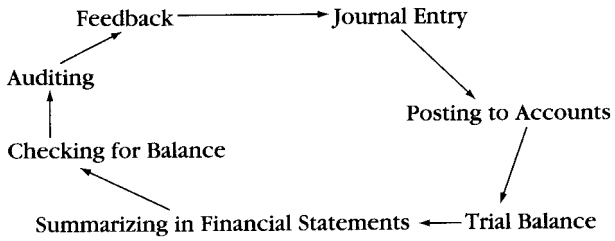

Figure 3-2 The accounting cycle.

the balance sheet, assets must equal the total of liabilities plus owners' equity (or of liabilities plus net assets). Further, the period's net income (profit, or excess of revenues over expenses), less any distribution of profit to shareholders, must equal the period's net change in owners' equity.

SOME BASIC ACCOUNTING ENTRIES

The following series of transactions illustrates the use of the general journal and the manner in which the entries are made. In this section, a set of entries are made under the accrual principle. In the section that follows, the same transactions are recorded on a cash flow basis.

Consider Home Health Services Corporation (HHSC), an investor-owned organization, established to provide home health care services in a suburban market. In Table 3–1, the initial investors provide $100,000 in cash to start HHSC. Because cash is an asset, a debit entry for $100,000 is made and labeled as "Cash" to indicate the account ledger to which the amount will later be posted. To maintain the balance of the fundamental accounting identity, a credit entry is necessary. The initial $100,000 establishes the shareholders' claim against the organization, so the appropriate credit entry is an owner's equity entry, "paid-in capital."

Now capitalized, HHSC is ready to begin offering its services. Prior to beginning operations, HHSC was awarded a contract to provide home health visits on behalf of its county's health department. The terms of the contract are for visits to be compensated at the fixed rate of *$50* per visit. The county insists that it pay HHSC for the visits made in each quarter only at the end of the quarter.

In its first month of operation, January, HHSC provided *120* home health visits for the county. Because January is only the first month of the quarter, the county makes no cash payment to HHSC. In fact, HHSC will receive no cash for January's visits until early April. The 120 visits were provided, however, and the management of HHSC is reasonably certain that payment will be made (the County Health Director signed the contract, after all), so the accrual principle requires that HHSC record (recognize or book) the associated revenues in January.

Table *3–2* shows the general journal double entries for recognition of January's revenues. Notice that the entries make no mention of cash, which is unaffected. Rather, a different asset, *accounts receivable,* increases with a debit entry of $6,000. The corresponding credit entry, required to maintain balance in the fundamental accounting identity, is to increase *revenues* by $6,000.

Three nurses make home health visits for HHSC. HHSC pays them as independent contractors at the rate of *$35* per visit. At the end of January, checks are written to the nurses for a total of $4,200. As the checks deplete HHSC's cash hold-

Table 3-1 Initial contribution of capital

Date	Transaction	dr	cr
1/1/20XX	Cash	$100,000.00	
	Paid-in capital		$100,000.00

Table 3-2 First revenues received

Date	Transaction	dr	cr
1/31/20XX	Accounts receivable	$6,000.00	
	Revenue		$6,000.00

ings, the cash account must be decreased with a credit entry. The balancing debit entry is an expense, labeled "nursing service expense." Table 3—3 illustrates this entry.

In January, management decided to purchase a personal computer system to use in managing HHSC's accounts. The cost to purchase and install the system was $6,000. That purchase involved an exchange of one type of asset (cash) for another (computing equipment). HHSC's accountant debited "computing equipment" and credited "cash." Because the benefits of the purchase of the computer will be enjoyed over several accounting periods, the accrual principle dictates that the purchase not be treated as an expense in the month of purchase. Rather, the "computing equipment" (asset) account is increased with a debit entry, and the cash (asset) account is decreased with a credit entry, each for $6,000. Table 3—4 illustrates this entry.

Clearly, the addition of the computer system involves an expense of some type at some time for HHSC. The accrual convention requires that the expense of the system be recognized not at the time of purchase (the time of the cash flow), but as the benefits of the use of the system are enjoyed. That is, an expense is recognized in each period during the useful life of the asset. That periodic expense is known as **depreciation.**

Depreciation

In common usage, *depreciation* means "loss of value." One might say, for example, that a new automobile depreciates the moment it is driven off the sales lot. Engineers say that a piece of equipment depreciates as it is used up or worn out. In accounting,

Table 3-3 Nursing service expense incurred

Date	Transaction	dr	cr
1/31/20XX	Nursing service expense	$4,200.00	
	Cash		$4,200.00

Table 3-4 Purchase of computing equipment for cash

Date	Transaction	dr	cr
1/15/20XX	Computing equipment	$6,000.00	
	Cash		$6,000.00

depreciation has a very different meaning. Depreciation expense is neither a measure of the using up of an asset nor an indication of its loss of market value. Accounting depreciation is *only* an expense item that allocates the historical cost of an asset to the years of its useful life. The selection of the means of allocating that cost need not correspond to the actual loss of market value of the asset over its life.

The simplest means of allocating the historical cost of an asset over its useful life is **straight-line depreciation.** Under straight-line depreciation, one begins with the full historical cost of the asset: its purchase price plus the other costs (delivery, installation) associated with bringing it into service. From that historical cost, one subtracts the expected salvage value at the end of the asset's useful life. The remainder is the basis for calculating depreciation. That basis is then divided by the number of years in the asset's useful life. The quotient is the asset's annual depreciation expense.

HHSC's computer system, for example, had a purchase price of $6,000 and no other historical costs. Personal computer systems are typically considered to have useful lives of 3 years. If the expected salvage value of the system is zero, then the system's annual depreciation expense is $2,000. Table 3–5 shows these calculations. Note that by adjusting the expected salvage value, one can increase or decrease the periodic depreciation expense.

Table 3–6 shows the entries that HHSC's bookkeeper should make in the general journal at the end of the computer system's first year of operation. First, an expense item, depreciation expense, is increased with a debit entry of $2,000. Note that no cash changes hands when that entry is made. Depreciation is *a non cash expense.* Instead, a new type of account, a **contra-asset,** accumulated depreciation, is established to receive the matching credit entry.

Contra-asset accounts are accounts that adjust the values of assets. They are increased with credit entries, just as are liabilities. As each year's depreciation expense is recognized, the accumulated depreciation account grows. Each year's balance sheet shows the value of assets as "assets less accumulated depreciation." Thus, at the end of an asset's useful life, its accumulated depreciation will equal its historical cost minus its salvage value, and only the anticipated salvage will remain on the books.

Table 3-5 Calculating straight-line depreciation

Historical cost of asset	$6,000.00	
Minus salvage value	0.00	
Depreciable basis		$6,000.00
Divided by estimated useful life		3
Annual depreciation expense		2,000.00

Table 3-6 Recording annual (straight-line) depreciation expense

Date	Transaction	dr	cr
1/31/20XX	Depreciation expense	$2,000.00	
	Accumulated depreciation		$2,000.00

Organizations that are subject to income taxation will not want to use straight-line depreciation for income tax reporting. Because depreciation is an expense that is deducted from net income for calculating income tax liability, those organizations that are subject to income taxation can lower their tax bills by increasing their annual depreciation expense. Because there is no cash outflow associated with depreciation expense, increasing depreciation expense and lowering income tax liability actually increases the net cash flow of a taxable organization.

The United States Internal Revenue Code allows the use of **accelerated depreciation** for organizations that want to increase their depreciation expense, and lower their tax liabilities, in the early years of the life of an asset. For assets put into place after 1986, the code mandates the use of the **Modified Accelerated Cost Recovery System (MACRS)** tables. Those tables specify, for assets of various useful lives, what proportion of the depreciable base can be deducted as depreciation expense each year. Table 3—7 shows those percentages for assets purchased, such as HHSC's computer system, in the first quarter of the year. Note that, under MACRS, HHSC

Table 3-7 Annual depreciation percentages under the modified accelerated cost recovery system: Assets placed in service in the first quarter. Reproduced with permission from CCH 2000 Depreciation Guide published and copyrighted by CCH Incorporated, 2700 Lake Cook Road, Riverwoods, IL 60015 (1-800-TELL-CCH)

	Recovery Period					
Recovery Year	3 Years	5 Years	7 Years	10 Years	15 Years	20 Years
1	58.33	35.00	25.00	17.50	8.75	6.563
2	27.78	26.00	21.43	16.50	9.13	7.000
3	12.35	15.60	15.31	13.20	8.21	6.482
4	1.54	11.00	10.93	10.56	7.39	5.996
5		11.01	8.75	8.45	6.65	5.546
6		1.38	8.74	6.76	5.99	5.130
7			8.75	6.55	5.90	4.746
8			1.09	6.55	5.91	4.459
9				6.56	5.90	4.459
10				6.55	5.91	4.459
11				0.82	5.90	4.459
12					5.91	4.460
13					5.91	4.459
14					5.91	4.460
15					5.90	4.459
16					0.74	4.460
17						4.459
18						4.460
19						4.459
20						4.460
21						0.557

Reproduced with permission from *CCH 2000 Depreciation Guide* published and copyrighted by CCH Incorporated, 2700 Lake Cook Road, Riverwoods, IL 60015 (1-800-TELL-CCH).

would be able to take more than half of the total historical cost of its computer system (58.33 percent) as depreciation expense in the first year.

Some organizations are torn between the desire to lower their tax bills by using accelerated depreciation and the desire to report high profits to shareholders by using straight-line depreciation. These groups need have no alarm. The code allows the use of two methods of depreciation, one for tax purposes and the other for reports to shareholders and others. The difference in tax lability between the two methods is placed in a liability account, **deferred tax liability.**

Table 3–8 shows the calculation of the first year's annual depreciation expense for HHSC's computer system under MACRS. Table 3–9 shows the entries HHSC would make in its general journal for that year's MACRS depreciation expense.

Inventory

Inventory consists of goods purchased or made and held for resale. Most health care organizations carry only a small proportion of their total assets as inventory, as they exist to provide services rather than to sell goods. Pharmacies and medical supply firms, however, carry substantial inventories, some items of which are very expensive. Providers of home infusion services and meals-on-wheels also hold substantial inventories.

Inventory is difficult to value. Consider a clinic that uses 100 1-cc syringes per day. Every few days, a clerk opens several boxes of syringes and dumps their contents into plastic bins, one bin for each size and type of syringe. To value the syringes on hand accurately, one would have to know on what day each syringe was dumped into its bin. Imagine a time of very rapid inflation, in which the historical cost of syringes (the market prices at which the syringes are purchased) rises by 10 percent per week. Are the syringes on hand the most recent ones purchased (are old syringes always used before new ones)? If so, the inventory is quite

Table 3-8 Calculating first-year depreciation under MACRS

Historical cost of asset	$6,000.00	
Minus salvage value	0.00	
Depreciable basis		$6,000.00
Multiplied by the first-year MACRS proportion*		0.5833
Annual depreciation expense		3,499.80

*This proportion depends on the useful life of the assset, the recovery year, and the quarter in which the asset is put into service.

Table 3-9 Recording annual (MACRS) depreciation expense

Date	Transaction	dr	cr
12/31/20XX	Depreciation expense	$3,499.80	
	Accumulated depreciation		$3,499.80

valuable. Or are the syringes on hand the oldest ones purchased (are new syringes dumped on top of old ones so that new syringes are used first and older, lower cost, syringes are always on hand)? If so, the inventory was purchased at a relatively low price and has a relatively low value.

The valuation of inventory has to be presented in dollar terms. One cannot report a holding of "400 1-cc disposable syringes with attached 12-gauge needles." But the historical cost of the 400 syringes depends on whether inventory is handled on a **first in—first out (FIFO)** basis or on a last **in—first out (LIFO)** basis. The choice of FIFO or LIFO affects not only the value of inventory reported on the balance sheet but also the **cost of goods sold,** an expense that affects net income. One's choice of FIFO or LIFO inventory valuation does not imply any difference in the physical treatment of inventory.

In practice, organizations may select whether they wish to use either the FIFO or the LIFO basis of inventory valuation. In either case the expense reported for cost of goods sold for the accounting period is defined as follows:

Cost of goods sold = Beginning inventory + Net purchases – Ending inventory

That is, beginning inventory and net purchases (the cost of purchases minus discounts and returns) equals the value of goods available for sale. Goods available for sale minus what is left at the end of the period (ending inventory) is the cost of the items sold.

Return to the case of HHSC, discussed earlier. When HHSC opened for business on January 2, it had no inventory (beginning inventory = $0). On January 5, HHSC purchased, for cash, 200 frozen meals to be resold to its clients. These meals were purchased for $2.50 each. On January 20, HHSC purchased 200 more meals, but by that time the unit price had risen to $3.00. At the end of January, a visit to the freezer found 100 meals on hand. What was HHSC's end-of-the-month inventory value, and what was its cost of goods sold for January?

Table 3—10 shows the necessary calculations for inventory value and cost of goods sold using the FIFO convention. Under FIFO, the first meals sold were the first ones purchased. Therefore the 100 meals on hand at the end of the month are assumed to be from the last group purchased. Thus the ending inventory value of the meals is $300 (100 meals at $3.00).

Table 3-10 Determining cost of goods sold; first in-first out inventory method

Date	Quantity	Price per Unit	Total Value
January 5, purchase	200	$2.50	$500.00
January 20, purchase	200	3.00	600.00
Available for sale in January	400		1,100.00
Minus January 31, inventory on hand	100		
Sold in January	300		800.00
200 @ $2.50			
+100 @ $3.00			
January 31, inventory on hand (100 @ $3.00)	100		300.00

Under FIFO the cost of goods sold is $800 (200 meals at $2.50 plus 100 meals at $3.00). The first order of meals was purchased for $500 and the second for $600. The value of goods available for sale in January, then, was $1,100. Because ending inventory was $300, cost of goods sold was $800.

Table 3—11 shows the calculation of inventory value and cost of goods sold under the LIFO convention. Under LIFO, the most recently purchased goods are assumed to be sold first. Now the 100 frozen meals remaining at the end of the month are assumed to be from the first order. Thus the value of the ending inventory is $250 (100 meals at $2.50). Following the necessary calculation, the cost of goods sold for January is $850 under the LIFO convention, compared to $800 under FIFO.

In periods of rising prices, use of the LIFO convention will produce lower inventory values and higher costs of goods sold than will the use of the FIFO convention. During the *1960s* and early 1970s, many organizations subject to income taxation switched from FIFO to LIFO. Why? Because, with prices rising steadily, use of LIFO increased cost of goods sold (an expense) and decreased taxable income. Use of LIFO may have depressed the income reported to shareholders, but it reduced the cash necessary to pay taxes. Note that the switch from FIFO to LIFO did not change anything real; no different handling of inventory was necessary. Also, although the switch reduced reported income, it did not involve any increase in cash outflows. In fact, for the taxable organization, after-tax net cash flows increased due to the change from FIFO to LIFO. Unlike the choice of depreciation method, firms must use the same method to value inventory for tax purposes as for reporting to shareholders.

Technological advances have made continuous inventory monitoring, identifying exactly which items from exactly which purchase lots are sold, quite easy. Bar coding of individual items allows organizations to track which items are used, when they are used, and which items remain on hand. Note, however, that for accounting purposes (and for the calculation of income tax liability), organizations can use LIFO inventory evaluation, even if they monitor their stocks continuously.

Table 3—12 shows HHSC's total revenues, total expenses, and net income for January, its first month of operation, under FIFO and LIFO. Note that no deprecia-

Table 3-11 Determining cost of goods sold; last in-first out inventory method

Date	Quantity	Price per Unit	Total Value
January 5, purchase	200	$2.50	$500.00
January 20, purchase	200	3.00	600.00
Available for sale in January	400		1,100.00
Minus January 31, inventory on hand	100		
Sold in January	300		850.00
200 @ $3.00			
+100 @ $2.50			
January 31, inventory on hand	100		250.00
(100 @ $2.50)			

Table 3-12 Revenues, expenses, and net income for January

First In–First Out		Last In–First Out	
Revenues		Revenues	
Sales of services	$6,000	Sales of services	$6,000
Expenses		Expenses	
Nursing services	4,200	Nursing services	$4,200
Cost of goods sold	800	Cost of goods sold	$850
	5,000		$5,050
Net income	1,000	Net income	$950

tion was recorded for January, as that entry is left until year-end. Under FIFO, January's net income is $1,000. Under LIFO, cost of goods sold is higher, and net income is $950.

CASH FLOW ACCOUNTING

Table 3–13 shows all of the transactions for HHSC for the month of January in cash flow terms. The investors' initial contribution of capital is the same as under accrual accounting but now is recognized as a source of cash. Under cash flow accounting, HHSC had no other revenue (no other source of cash inflow) for the month of January.

Nursing service expense involved a cash outflow of $4,200 in January and is recognized under cash flow accounting, just as it is under accrual accounting. The purchase of the computer system was treated as the acquisition of an asset, generating subsequent annual depreciation expense, under accrual accounting. Under cash flow accounting, however, the entire purchase price is regarded as a cash outflow at the time the purchase was made. Note that HHSC could have delayed that cash outflow by making the purchase on credit. On a cash flow basis, the choice of FIFO and LIFO is irrelevant. Cash out for inventory was $1,100 (200 meals at $2.50 and 200 meals at $3.00).

Thus HHSC's net cash flow for January is $94,700. That figure is quite different from $1,000 or $950 (depending on inventory valuation method) net income shown under accrual accounting. Why the difference? One difference is timing. Under

Table 3-13 Cash flows for January

Cash inflows	
Contribution of equity	$100,000
Revenues	0
	100,000
Cash outflows	
Nursing services	4,200
Inventory purchases	1,100
	5,300
Net cash flow	94,700

cash accounting, only cash transactions matter. Under accrual accounting, revenues and expenses are matched to the events that produce them.

The second difference between cash and accrual accounting is the treatment of the equity contribution. It is a cash inflow, but it is not revenue. Note that, without that extraordinary item, January's net cash flows would be grim indeed.

FUND ACCOUNTING

Government entities, including hospitals, clinics, and public health departments, have a special record-keeping need. Rather than being revenue based, depending on the sale of services for their survival, they are appropriation based, depending on appropriations from the public purse for their operating and capital funds. To maintain adequate records to demonstrate that they use their (publicly appropriated) funds in the manner in which they were intended, government entities developed a bookkeeping system known as *fund accounting.* Private, not-for-profit organizations often use fund accounting to demonstrate stewardship of their assets in the manner in which donors and trustees intend.

Although fund accounting is tedious and can be cumbersome, most specialists in governmental accounting recommend it for all government entities. Indeed, the GASB mandates the use of fund accounting for those entities subject to its rule-making authority (Hay & Wilson, 1992, pp. 17—18). Despite encouragement to drop the practice, fund accounting is still common in the private, not-for-profit sector.

Under fund accounting, the entity is divided into artificial subentities called *funds.* These funds need not correspond to any organizational units. A fund does not typically have its own staff. A fund need not even have its own separate bank account. Rather, each fund maintains its own set of internally balanced books (debits equal credits within each fund; a debit entry in one fund must be matched by an equal credit entry *in the same fund).*

Typically, there is a general fund to which are debited most of the entity's assets and which, in most cases, conducts all of the transactions between the entity and the outside world. There may also be a capital fund; one or more special-purpose funds; a fund for debt service; and enterprise funds, one for each revenue-producing enterprise (or subsidiary) within the entity. Moving cash from a special purpose fund to the general fund, in anticipation of a transaction with outsiders, requires an interfund transfer. The balance sheet of an entity that uses fund accounting shows the assets, liabilities, and net assets of each of the entity's funds.

Table 3—14 shows the purchase of an incubator by Clearwater County Memorial Hospital (from the Continuing Case at the end of the chapter). Memorial is owned by a hospital authority, established by the county. As such, it is obliged to use fund accounting. To facilitate managerial control, all transactions with outsiders must be made through the general fund.

Some years ago, Mrs. Beulah Smith bequeathed $250,000 (virtually all of her estate) to Memorial to provide care for newborn infants. The endowment (Mrs. Smith's fund) still exists and provides new and replacement assets for Memorial from time to time.

Table 3-14 Purchase of incubators by Mrs. Smith's fund

Journal entries for Mrs. Smith's fund

Date	Transaction	dr	cr
2/1/20XX	Due from other funds	$5,000.00	
	Cash		5,000.00
2/15/20XX	2 incubators	5,000.00	
	Due from other funds		5,000.00

Journal entries for Mrs. Smith's general fund

Date	Transaction	dr	cr
2/1/20XX	Cash	$5,000.00	
	Due to Mrs. Smith's fund		5,000.00
2/10/20XX	2 incubators	5,000.00	
	Cash		5,000.00
2/15/20XX	Due to Mrs. Smith's fund	5,000.00	
	2 incubators		5,000.00

As shown in Table 3-14, Memorial's trustees have authorized, at the request of a committee of pediatricians, the purchase of two incubators ($2,500 each) with money from Mrs. Smith's fund. Mrs. Smith's fund is classified as *a restricted fund* because its assets can be used only for specified purposes. Note that, for the purchase to take place, entries must be made in the general journals of both Mrs. Smith's fund and the general fund.

First, $5,000 must be transferred from Mrs. Smith's fund to the general fund. The financial office accomplishes this on February 1. Cash, an asset, is decreased in Mrs. Smith's fund (a credit entry decreases an asset), while "Due from other funds," also an asset, increases in that fund. The debit and credit entries balance within Mrs. Smith's fund, as the principles of fund accounting require. The general fund must also recognize the interfund transfer. Cash must increase, with a debit entry for $5,000. To balance that entry within the general fund, "Due to other funds," a liability, increases by an equal amount. The debit and credit entries balance within the general fund.

Now the incubators may be purchased. As the purchase is a transaction with an outside party, only the general fund's general journal is involved. "Incubators," an asset, is increased by $5,000 through a debit entry on February 10. To offset that entry, and to actually make the purchase, cash, an asset is decreased by $5,000 through a credit entry. Again, the debit and credit entries balance on the books of the general fund.

Finally, ownership of the two incubators must be transferred to Mrs. Smith's fund. The general fund's liability, "Due to other funds," is decreased by a debit entry on February 15. To balance, the general fund's holding of the asset class "Incubators" decreases by $5,000 through a credit entry. Mrs. Smith's fund

increases its holdings of "Incubators" through a debit entry. To balance, Mrs. Smith's fund's holding of "Due from other funds" decreases through a credit entry.

When all of the transactions are completed, Mrs. Smith's fund has traded $5,000 in cash for $5,000 in incubators. The general fund is unaffected. The transaction flowed through the general fund but left its assets and liabilities unchanged.

Why all of the fuss? Why the elaborate transfer of assets from fund to fund? Ultimately, the purpose of maintaining the integrity of Mrs. Smith's fund is to keep faith with the late Mrs. Smith. Fund accounting is a means of demonstrating the stewardship of Mrs. Smith's bequest. Why force all transactions through the general fund? One reason is to make internal control easier. If one fund and one bank account are used for all purchases, control of those purchases is easier than if many subentities deal with the outside world.

Fund accounting is not required of private, not-for-profit institutions, and in recent years many such organizations have dropped the practice. Similarly, many not-for-profit hospitals have adopted, under FASB prodding, other aspects of GAAP, such as the depreciation of fixed assets. It is still difficult, given the differences in their accounting practices, to compare the accounting records of not-for-profit institutions with those of investor-owned entities (Sherman, 1986).

THE SPECIAL CASE OF HOSPITAL REVENUES

Measuring revenues has always been a problem for hospitals. When a hospital service is provided, a bed-day in an adult medicine unit, for example, the provider often has no way of knowing exactly how much revenue it will eventually receive from the patient or from a third-party payor.

As a first approximation, the hospital's patient accounts office can record the *charge* for the service. The charge is the standard fee assessed for the service before any adjustments are made. The charge need be tied neither to the cost of providing the service nor to the actual cash the hospital will eventually receive.

Over time, the differences between charge-based gross revenue and what the hospital is likely to receive have grown huge. Some patients are objects of charity. Their care will never be compensated. Other patients are admitted with a promise to pay but never do. Their accounts become uncollectible as bad debts. The total of charity care and bad debts (measured in some consistent way) is known as uncompensated care.

Many third-party payors exert pressure on hospitals to reduce what the payor must render for services. The difference between the charge for a bed-day in the adult medicine unit and the amount that the hospital has agreed to accept from the patient's insurance carrier is a contractual allowance. Preferred provider organizations (PPOs) and health insurance firms with substantial shares of local markets (Blue Cross, for example) are able to negotiate substantial contractual allowances.

Under the Prospective Payment System (PPS), the federal Health Care Financing Administration (HCFA), the administrator of the Medicare program, has *imposed* a system of contractual allowances on most of the hospitals in the United States. For Medicare-eligible patients, HCFA pays a fixed amount *per admission* based on the patient's **diagnosis-related group (DRG)** (Grimaldi, 1991; Russell,

1989; Torchia, 1992). DRGs are categories of diagnoses upon admission based on the International Classification of Diseases (Karaffa, 1993). The difference between charges and the DRG-based reimbursement is a contractual allowance and is often substantial.

Medicaid reimbursement, covering a portion of medically indigent patients, varies from state to state. In every state in which the program operates (every state except Arizona, which has a substitute program), the difference between the Medicaid reimbursement rate for any given service and the provider's charge constitutes a contractual allowance.

Prior to 1990, standard hospital accounting practice was to record the total of charges for all services as *gross revenue* for the period in which the services were rendered. Uncompensated care (charity care plus bad debt valued at charges, not cost) and contractual allowances were deducted from gross revenue on the income statement to obtain a net revenue figure. Net revenue, then, became the starting point for the other calculations that went into the income statement and the basis for well-informed financial statement analysis.

In 1990 the American Institute of Certified Accountants (AICPA) issued its *Audits of Providers of Health Care Services,* changing the way hospitals record and account for their revenues (American Institute of Certified Public Accountants, 1990; Bitter & Cassidy, 1992). Under the new rules, charity care does not generate revenue because the provider has no expectation of payment, but is to be described in detail in footnotes to the financial statements. Bad debts are to be treated as an expense, as is the practice in other industries. No gross revenue figure is to be presented, but net revenue (now the starting point on the income statement) is to be net of all contractual allowances.

AUDITING:THE MISUNDERSTOOD ART

Most users of financial statements pay little or no attention to the **auditor's opinion** that accompanies the reports themselves. Many users misunderstand the role of the audit, attributing to it meaning that it does not have. An audit does not guarantee the financial soundness of the organization. An auditor's opinion does not guarantee that the reporting organization will not be bankrupt by the end of the following year.

The auditor's opinion guarantees only that the statements were prepared according to Generally Accepted Accounting Principles. That is, the statements mean what an accountant understands them to mean for the period they cover. The next period may be different from the last, but for the reporting period the statements are a fair representation of the organization's position, if they are interpreted according to the logic of GAAP.

Privately owned organizations (whether not-for-profit or investor-owned) are audited, if so required, by independent accounting firms. Government-owned organizations may be audited by independent CPAs or, in some situations, by governmental agencies.

Auditors check a sample of transactions records, the organization's accounting procedures, and the basis for the accounting decisions represented in the

financial statements. On that basis, they issue an opinion. The auditor's opinion may be unqualified (these statements fairly represent the financial position of the organization, according to GAAP), qualified (these statements fairly represent the financial position of the organization, except that . . .), or unfavorable (these statements do not fairly represent ...).

The opinion includes several sections. Especially important are the Scope section, in which the auditors spell out what statements their opinion covers, and the Opinion section, in which the auditors state their opinion in detail. Figure 3—3 shows the auditor's opinion for recent financial statements of Tenet Healthcare Corporation.

SUMMARY

Accounts have developed a set of rules and procedures for recording the financial transactions of health care organizations. Those rules are known as Generally Accepted Accounting Principles, and their requirements are far from commonsensical to most managers. First, every transaction required two entries, a debit and a credit. Second, revenues and expenses must be recorded not when cash flows in and out but when promises are made, or at (arbitrary) points in the lives of assets.

These rules, and the financial statements produced under them, constitute the language of the health care business. Those who would use accounting data to make financial decisions must understand what those data mean. The ambiguities of accounting language make interpreting financial statements (the subject of Chapter 4) a challenging task.

Discussion Questions

1. Which is the better accounting basis for a large hospital, accrual or cash? For a one-physician medical practice? For a household? Explain.
2. What are some anomalies that would be introduced into financial statements by a conversion from accrual to cash accounting?
3. What are some ambiguities introduced by the use of accrual accounting?
4. "We know they're a good, sound outfit. Look, their auditor signed off on their financial statements." Why is the speaker mistaken? Explain.
5. *Debit* and *credit* have neither honorific nor pejorative meaning in accounting. Explain.

The Board of Directors
TENET HEALTHCARE CORPORATION:

We have audited the accompanying consolidated balance sheets of Tenet Healthcare Corporation and subsidiaries as of May 31, 1999 and 2000, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity and cash flows for each of the years in the three-year period ended May 31, 2000. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. 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 includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Tenet Healthcare Corporation and subsidiaries as of May 31, 1999 and 2000, and the results of their operations and their cash flows for each of the years in the three-year period ended May 31, 2000, in conformity with accounting principles generally accepted in the United States of America.

As discussed in Note 15 to the consolidated financial statements, effective June 1, 1999, the Company changed its method of accounting for start-up costs.

KMC LLP

Los Angeles, California
July 25, 2000

Figure 3-3 Auditor's report. Source:Tenet Corporation, Annual **Report, 2000.**

CONTINUING CASES

Henry Kirk and Janet Fowler are sitting across the desk from Tom Land, PCI's loan officer at CCB Bank (once known as Clearwater County Bank, the bank now aspires to compete with the major regional banks for commercial loan business in this part of the state). They have come to ask for a 90-day, $100,000 note (loan), as they have many times in the past. The request should be routine. In fact, PCI's 90-day loans are one of the mainstays of CCB's business.

This time, however, Tom asks some embarrassing questions about PCI's flagging profits. Janet Fowler, as the only accountant present, has supported PCI's request with a couple of special arguments. She says PCI is in better shape than it appears. Profits are low because the clinic's recent purchase of a third-generation lithotripter generated a big expense in the last quarter. Also, LIFO valuation has made inventories, actually a healthy item on the balance sheet, look artificially low. Besides, she says, if there is any trouble with current cash flows over the next 90 days, PCI can always pay off the note out of its substantial retained earnings.

CASE QUESTION

Evaluate the case Ms. Fowler makes to Mr. Land.

REFERENCES

American Institute of Certified Public Accountants. (1990). *Audits of providers of health care services.* New York: Author.

Bitter, M.E. & Cassidy, J. (1992). Perceptions of new AICPA audit guide. *Healthcare Financial Management,* 46(11), *38.*