Case 5.1: Jefferson Imaging Clinic

Key concept: Understanding depreciation and deferred taxes

The Jefferson Imaging Clinic Inc., a for-profit entity that is taxed as a "C" corporation, was started three years ago by James Jefferson, MD, to provide fast, low-cost imaging services for patients in a large metropolitan area. The clinic is located in a medical office park and provides both imaging—via fluoroscopy, projectional radiographs, computerized tomography (CT), and magnetic resonance imaging (MRI)—and image interpretation. The clinic has state-of-the-art computer capabilities and can transmit the digital images along with the image interpretation to local doctors when requested.

The imaging equipment was all acquired during the first month of the clinic's operations at a total cost of $2,000,000. For financial reporting purposes, the equipment is being depreciated over five years using the straight-line method with no expected salvage value. For tax purposes, the equipment is being depreciated using the Internal Revenue Service's Modified Accelerated Cost Recovery System (MACRS) rates, which are as follows:

Year	Yearly Rate
1	.200
2	.320
3	.192
4	.115
5	.115
6	.058
Total	100.000

These MACRS rates are based on the double-declining balance depreciation method, five-year life, and they incorporate the half-year convention for the first year.

Assignments and Questions

1. Compute the yearly depreciation using the straight-line method.

2. Compute the yearly depreciation using the MACRS method.

3. Compute the yearly book-tax depreciation differences between the two methods.

4. What is the net difference in depreciation over the six-year period?

5. Assuming that Year 1 net income before depreciation is $800,000 and the effective income tax rate is 30 percent, record the entry for income tax expense for Year 1.

6. Assuming that Year 2 net income before depreciation is $800,000 and the effective income tax rate is 30 percent, record the entry for income tax expense for Year 2.

7. Assuming that Year 5 net income before depreciation is $800,000 and the effective income tax rate is 30 percent, record the entry for income tax expense for Year 5.

8. What is the overall six-year financial effect from the government providing the MACRS option for income tax purposes?

9. What business advantage would be provided if the government allowed 100 percent of equipment cost to be deducted in the year purchased?

Case 5.2: West River Orthopedic Clinic

Key concept: Physical inventory and profit effects

The West River Orthopedic Clinic prescribes a variety of medical supplies for the treatment of various patient conditions. Although patients are free to purchase the medical supplies from any supplier they choose, the clinic provides the option of acquiring most of the items from the clinic. Standard markup procedure is to price the supplies at 300 percent of cost.

Medical supplies are physically inventoried at the end of each month, and the computer records are adjusted monthly for any discrepancies. After this adjustment, medical supplies are ordered based on a comparison of standard order quantities to supplies on hand.

At the end of the fiscal year, a comparison of the computer's perpetual inventory listing of medical supplies on hand to actual supplies per physical inventory revealed the following:

Inventory Number	Description	Average Unit Cost	Quantity on Hand per Computer	Quantity on Hand per Physical Inventory
104	Wrist compression support	$8	10	7
112	Arm sling	$9	12	10
114	Carpal tunnel wrist support	$10	5	4
116	Thumb brace	$12	7	6
121	Clavicle support	$14	11	10
123	Lumbosacral support	$25	15	12
130	Dorsiwedge night splint	$72	4	2

Assignments and Questions

1. Compute the ending inventory value per the computer.

2. Compute the ending inventory value per the physical inventory.

3. Which of the two values should appear in the financial statements? Why?

4. What adjusting entry is needed?

5. What is the likely effect on revenues and profit?

6. List three common reasons there might be a discrepancy between the perpetual inventory per the computer and the physical inventory.

7. Are additional controls over the supplies inventory needed? Why or why not?

8. Suggest one supplies inventory control that should be considered.

Case 5.3: Insertion Clinic

Key concept: FIFO, LIFO, specific identification, and weighted advantage inventory valuation

The Insertion Clinic Inc. specializes in quick orthopedic repairs of knees via knee replacement surgery. The knee replacement inserts are very expensive, so the clinic has good inventory control and takes a physical inventory at year-end to establish the ending inventory quantity.

Inventory activity spanning fiscal year 2015 for Type 112 Knee Inserts, which are billed at $10,000 each, is depicted in the following table:

Description	Units	Unit Cost	Total Cost
Beginning inventory (January 1)	10	$2,000	$20,000
March 1: Purchase #1	18	$2,200	$39,600
June 15: Purchase #2	8	$2,600	$20,800
October 7: Purchase #3	12	$2,900	$34,800
Total on hand	48		$115,200
Inventory used (sold)	28		
Ending inventory (December 31)	20		

Suzy Smart, office manager, is pursuing her MHA degree at a prestigious local medical university. She recently read an interesting book on earnings management that suggested that accounting choices can affect net income. She was interested in comparing the effect of different inventory costing methods on net income.

One inventory costing method is *weighted average costing*. This approach is different from calculating a simple arithmetic average of the different unit costs (which applies equal weighting to unit costs) because each cost is weighted by the quantity purchased at that price. The weighted average cost can be computed by dividing total cost on hand by total units on hand.

Another inventory costing method is *specific identification costing*. This method requires some unique identifier on each inventory item, such as a serial number or stock-keeping unit (SKU).

A third inventory costing method is *first-in, first-out (FIFO) costing*. This method assumes that the first costs acquired (the oldest chronologically) are the ones assigned to cost of inventory used (sold).

A fourth inventory costing method is *last-in, first-out (LIFO) costing*. This method assumes that the last costs acquired (the youngest chronologically) are the ones assigned to cost of inventory used (sold).

Assignments and Questions

1. Help Suzy Smart by valuing inventory under the methods described in this case.
   a. Compute the cost of inventory used (sold) via weighted average costing.

   b. Compute the cost of inventory used (sold) via specific identification costing. Assume that the 20 units in ending inventory were identified as comprising 18 units from purchase #1 and 2 units from purchase #3.

   c. Compute the cost of inventory used (sold) via FIFO costing.

   d. Compute the cost of inventory used (sold) via LIFO costing.

2. Which method produces the highest profit? Why? Does this method always produce the highest profit?

Case 5.4: Flush Medical Center Inc.

Key concept: Recording of hospital controlling investments in medical practices

Flush Medical Center Inc. is the largest for-profit hospital in a major metropolitan area. It has 625 approved beds. Management has undertaken an aggressive strategy to improve net income by increasing the number of feeder entities. Part of this strategy involves buying medical practices and contracting with the owner-physicians to remain actively involved. Flush Medical Center Inc. operates these types of medical practices as independent, stand-alone entities, where the only financial benefit expected, other than annual dividends, is an increase in referrals to the hospital.

During fiscal year 2015, Flush Medical Center Inc. purchased, with cash payments, 100 percent of the equity securities for two medical practices:

- On January 1, 2015, it purchased 10,000 common shares of East River Orthopedics Inc. for $100 per share. The fair market value of identifiable tangible and intangible assets minus liabilities (net assets) was $800,000.
- On July 1, 2015, it purchased 50,000 common shares of Fast Slash Surgery Inc. for $50 per share. The fair market value of identifiable tangible and intangible assets minus liabilities (net assets) was $2,500,000.

For fiscal year 2015, East River Orthopedics Inc. reported a net income of $100,000, and Fast Slash Surgery Inc. reported a net income of $400,000. No intercompany purchases or sales of products or services occurred between Flush Medical Center Inc., East River Orthopedics Inc., and Fast Slash Surgery Inc. On December 31, 2015, East River Orthopedics Inc. declared a dividend of $10 per share, and Fast Slash Surgery Inc. declared a dividend of $1 per share. These dividends are to be paid in January 2016. All three companies' financial statements are on December 31 fiscal year-ends.

Questions

1. How would the January 1, 2015, acquisition of East River Orthopedics Inc. be recorded on the books of Flush Medical Center Inc.?

2. How would the July 1, 2015, acquisition of Fast Slash Surgery Inc. be recorded on the books of Flush Medical Center Inc.?

3. How much would the 2015 net income before tax of Flush Medical Center Inc. increase due to the acquisition of East River Orthopedics Inc.?

4. How much would the 2015 net income before tax of Flush Medical Center Inc. increase due to the acquisition of Fast Slash Surgery Inc.?

5. How would the dividends be recorded?

6. An independent valuation of East River Orthopedics Inc. on December 31, 2015, placed the estimated fair market value of the overall company at $800,000. What journal entry, if any, would be required on the books of Flush Medical Center regarding this valuation?

Case 5.5: Big American Hospital Corporation

Key concept: Dividend policy and retained earnings

Big American Hospital Corporation is a large, publicly held, for-profit company that operates a nationwide network of hospitals and rehabilitation clinics. Revenues had been growing around 10 percent per year for the past several years, and the company had a banner year in 2015. The chief financial officer (CFO) reported to the board of directors in a January 6, 2016, meeting that net income after tax was $1.1 billion for the fiscal year ending December 31, 2015—the highest net income ever recorded by the company.

The board then discussed issuing a cash dividend to common stockholders. Past board policy had been to limit the dividend payout ratio to a maximum of 70 percent of net income. Accordingly, a $750 million cash dividend, payable to stockholders of record on January 20, 2016, was proposed by one board member.

The CFO responded that she thinks a $750 million cash dividend might be too large. She then provided the following summary balance sheet (with dollar figures in millions):

Assets	
Current assets	
Cash	$100
Receivables	5,000
Supplies	800
Short-term investments	200
Total current assets	6,100
Property, plant, and equipment	12,300
Long-term investments	500
Deferred income taxes	600
Goodwill	2,000
Total assets	$21,500

Liabilities and Stockholders' Equity	
Current liabilities	
Accounts payable	$1,600
Accrued salaries	700
Other accrued expenses	1,400
Long-term debt due in 1 yr.	2,100
Total current liabilities	5,800
Long-term debt	13,500
Stockholders' equity	
Common stock (1 million shares at $100 par value)	100
Retained earnings	2,100
Total liabilities and stockholders' equity	$21,500

The industry median debt financing percentage (debt / total assets) is 45 percent for hospitals with 500 or more beds.

Questions

1. Why would the board of directors limit the dividend payout ratio to a maximum of 70 percent?

2. What journal entry would be necessary to record the proposed $750 million dividend, if approved by the board of directors?

3. Why would the CFO think a $750 million dividend is too large when the company just recorded net income of $1.1 billion and $2.1 billion of retained earnings?

4. Can the company sell the $2 billion of goodwill and use the proceeds to pay the dividend?

5. If the company cannot pay a $750 million dividend, what other alternatives exist for paying the shareholders a dividend?

PART

VI

Application of Time Value of Money Concepts to Accounting

Case 6.1: Charleston Painless Surgery Center

Key concept: Time value of money and Excel functions to automate computations

Meredith Becker was born in Charleston, South Carolina, but she traveled upstate to earn a bachelor's degree in business from Clemson University. After graduation, she obtained a job at the Medical University of South Carolina (MUSC) and subsequently received her master's degree from MUSC's executive MHA program. After six years at MUSC with a wide variety of successful assignments, Meredith became chief operating officer of Charleston Painless Surgery Center (CPSC), a specialty surgery center owned by six physicians.

Soon after starting at CPSC, Meredith found herself facing a series of decisions involving time value analysis. You are to assume the role of her MHA intern and see how you, with the tools available in Microsoft Excel, can help her with these decisions.

Questions

1. Charleston Painless Surgery Center currently has $100,000 in excess cash. Meredith wants to invest the cash in a three-year bank certificate of deposit (CD) where, at maturity, the buyer receives the principal plus accumulated interest.
   a. What is the future value of the CD if it pays 2 percent interest compounded annually? 1 percent? 3 percent? *(Hint: Use Excel's "FV" function.)*

   b. Big Bank offers a CD with 3 percent nominal (stated) interest that is compounded monthly. What is the effective annual rate on this CD? *(Hint: Use Excel's "Effect" function.)* What will the value be in three years if the $100,000 is invested in this CD? *(Hint: Use Excel's "FV" function.)*

2. Meredith thinks CPSC's current computer hardware and software system will need to be replaced in three years at an estimated cost of $500,000.
   a. What amount must be currently invested in a CD paying 3 percent annual interest to accumulate to $500,000 in three years? *(Hint: Use Excel's "PV" function.)*

   b. What annual interest rate will allow a current investment of $450,000 to accumulate to $500,000 after three years? *(Hint: Use Excel's "Rate" function.)*

   c. Another option for accumulating $500,000 in three years is to make three equal annual payments into a savings account earning 4 percent interest, with the first payment being made immediately. What type of annuity is this? What is the amount of the equal annual payments? *(Hint: Use Excel's "Pmt" function.)*

3. The surgery center's building in downtown Charleston has an attached garage, but CPSC employees and patients use only about 50 percent of the garage's space. Meredith is under discussions to lease the unneeded garage space for five years to a local business. The lessee's cash flow needs can be accommodated by allowing the lease payments to vary as follows:

End of Year	Net Cash Flow
Year 1	$25,000
Year 2	$30,000
Year 3	$35,000
Year 4	$40,000
Year 5	$25,000

   a. What is the present value of the proposed lease payments at Year 0 if the required rate of return is 10 percent annually? *(Hint: Use Excel's "NPV" function.)*

   b. If the proposed lease payments are invested at 10 percent annually, what will the future value of the payments accumulate to at the end of Year 5?

4. Time value analysis involves using a periodic rate to either discount or compound cash flows. How do we determine the appropriate periodic rate to use?

Case 6.2: Big Valley Hospital

Key concept: Bond issuance valuation and bond interest expense

The board of directors and CEO of Big Valley Hospital have authorized temporary financing of a major hospital expansion by selling $10 million of three-year term bonds with a coupon (stated) interest rate of 3 percent. Interest is payable annually.

The CFO prepared the following principal and interest repayment table for the board's information:

	End of Year 0	End of Year 1	End of Year 2	End of Year 3	Totals
Bond face amount	$10,000,000				
Yearly interest		$300,000	$300,000	$300,000	$900,000
Principal repayment				$10,000,000	$10,000,000
Total payments					$10,900,000

The CFO informed the board that, due to Big Valley Hospital's AAA credit rating, the market rate of interest at the date of bond issuance would only be 2 percent.

Questions

1. How much cash will Big Valley Hospital get from issuing the bonds? (Ignore issuance costs.)

2. What will be the amount of Year 1 interest expense in the financial statements for the bonds?

3. What journal entry would be required to record interest expense for Year 1?

Case 6.3: Face Smooth Clinic

Key concept: Computing the value of and recording a lease

The Face Smooth Clinic performs a variety of procedures, including abrasion treatments and peels, to help individuals have healthier and younger-looking faces. The clinic has been in operation for three years. During this period, the number of patients has increased dramatically, and the clinic is currently very profitable.

The clinic started with a paper-based patient record-keeping system in order to keep costs down. Now that the clinic is profitable and the patient base has become quite large, Fred Fast, the clinic manager, would like to move to a computer-based patient record-keeping system.

Fred spoke with several vendors about acquiring a turnkey computerized patient record-keeping system. The option that seemed to have the best features and cost was the "Enter Once" system, which could be purchased outright for $100,000 or leased for $25,000 per year for five years ($125,000 total lease payments), with the lease payments to occur at the end of each year of the lease. Both payment options include system maintenance and software upgrades. The lease alternative provides an option for Face Smooth Clinic to purchase the system for $1,000 at the end of the lease. The system would be depreciated over five years, which is its estimated economic life, for both book and tax purposes. However, book depreciation would be straight-line, and tax depreciation would be MACRS.

Face Smooth Clinic recently borrowed funds on a seven-year secured note payable at 10 percent, and Fred Fast thinks that 15 percent is probably a good estimate of the cost of capital for Face Smooth Clinic.

Assignments

1. Compute the value of the lease asset that should be recorded on the balance sheet.

2. Make the journal entry for recording the acquisition of the leased asset.

3. Make the journal entry to record the $25,000 lease payment at the end of Year 1.

4. Make the journal entry to record straight-line book depreciation at the end of Year 1.

PART

VII

Valuing Equity Securities

Case 7.1: North Bend Hospital

Key concept: Parsimonious forecasting of free cash flows

North Bend Hospital (NBH) is a profitable, rapidly growing hospital system in the Pacific Northwest. Part of its growth strategy is to purchase physician practices and integrate them into the NBH system while retaining the physicians as employees.

The CFO has entered into purchase discussions with Rogue River Medical Associates (RRMA), a physician practice employing 15 physicians with various specialties. RRMA reported fiscal year 2015 revenues of $4,000,000, with a net operating profit margin of $500,000. Its December 31, 2015, financial statements revealed that net operating assets totaled $600,000 and debt totaled $400,000.

The CFO of NBH estimates that RRMA revenue will grow at a rate of 10 percent per year for the next three years and then slow to a long-term growth rate of 3 percent. He thinks that physician compensation agreements will maintain a stable net operating profit margin and that the current margin will be able to be maintained indefinitely. Net operating assets are expected to grow at 5 percent per year for three years and then slow to 2 percent indefinitely.

The NBH current historical cost of capital is 10 percent, but the CFO has been using a 12 percent hurdle rate for capital investments.

RRMA has suggested that it would accept a purchase offer of $4 million. RRMA is willing to take a $500,000 initial payment, with the balance paid at the rate of $500,000 per year (payment includes implicit interest at 5 percent) until the purchase price is paid.

Assignment and Questions

1. Forecast the free cash flows for Rogue River Medical Associates.

2. Are these cash flows sufficient to make the payments on the purchase price?

3. What should the CFO do?

Case 7.2: Fast Knife Clinic

Key concept: Valuation via free cash flows

The shareholders of the Fast Knife Clinic are contemplating selling their shares to a large area hospital. The clinic's 2015 financial statements produced the following data:

- Revenues: $100,000
- Net operating profit margin: $20,000
- Net operating assets: $30,000

A review of past performance for 2015 and earlier years, as well as a look at future competitive conditions, produced the following estimates:

- Revenue growth: 10 percent per year for three years, then 1 percent indefinitely
- Net operating margin: stable at 20 percent indefinitely
- Net operating asset growth: 5 percent per year for three years, then 1 percent indefinitely
- Weighted average cost of capital: 7 percent

Assignment

Using the following template, forecast free cash flows for 2016, 2017, 2018, and beyond, and then estimate the entity value of the Fast Knife Clinic using the discounted free cash flow model. (Don't forget to forecast the terminal period after 2018 and include it in your model!)

	2015 Actual	2016 Forecast	2017 Forecast	2018 Forecast	Terminal Period Forecast
Revenues	100,000				
Net operating profit margin	20,000				
Net operating assets	30,000				
Free cash flows to firm					

Hint:

1. *Forecast revenues using growth rates given.*
2. *Forecast net operating profit margin using rate given.*
3. *Forecast net operating assets using growth rates given.*
4. *Calculate the investment needed to increase net operating assets from the prior year's amount.*
5. *Calculate yearly free cash flows (FCFs) as net operating margin minus the increase in net operating assets.*
6. *Assume terminal period cash flows are a perpetuity that occurs at the close of the 2018 fiscal year. The value of the perpetuity = FCF / (Cost of capital – Revenue growth rate).*
7. *Discount the cash flows back to 2015 using the weighted average cost of capital to get the estimated intrinsic value of Fast Knife Clinic.*

PART

VIII

Cost Drivers and Cost Shifting in Healthcare

Case 8.1: Quiet Rest Inc.

Key concept: Understanding and describing cost drivers

Over the course of two years, Chris Frank spent a large amount of time overseeing his grandfather's care. Following his grandfather's death, Chris decided to build on his experience by opening a continuing care retirement community (CCRC). (You can find details about CCRCs from the AARP website, at www.aarp.org/relationships/caregiving-resource-center/info-09-2010/ho_continuing_care_retirement_communities.html, and from other Internet resources.) Chris did some research on CCRCs and found that two others operated in the local community.

After carefully researching the area, Chris incorporated the business as the for-profit corporation Quiet Rest Inc. (QRI). He then obtained a $500,000 financing commitment from a relative. Subsequently, he hired three former college classmates to help get the business started.

Questions and Assignments

1. What is a likely mission for Quiet Rest Inc.?

2. Suggest a strategic positioning goal that QRI might strive for in its effort to compete with the two other CCRCs in the community.

3. Identify two items that might be long-range goals.

4. Identify two items that might be goals for the coming year.

5. Describe two decisions that will be structural cost drivers.

6. Describe two decisions that will be organizational cost drivers.

7. Identify two possible activity cost drivers.

Case 8.2: Slippery Hospital

Key concept: Calculating a charge rate that supports cost shifting (cross-subsidization)

Hospitals serve a wide variety of patients and are reimbursed in a number of different ways and at various rates. The facility fee for providing a hospital bed for one day is sometimes referred to as the daily "charge rate" or daily "bed rate." This rate, of course, does not include the actual cost of medical procedures, but it is the rate at which the gross bill for a bed may be calculated before the application of contractual and other adjustments. The charge rate has to cover all payer types, as well as charity care and bad debts. As a result, some "cost shifting" typically occurs, where one category or payer is charged more in order to cover costs for another category or payer.

Slippery Hospital anticipates serving 100 patients who will pay in the following manner:

Number of Patients	Patient Description	Reimbursements per Patient
30	Medicare patients	$1,900
30	Medicaid patients	$1,700
20	Managed care patients	90% of charges
10	Private insurance patients	100% of charges
4	Charity care patients	$0
6	Bad debt patients	25% of charges (75% loss)
Total = 100		

Assignment and Question

1. Assume that it actually costs $2,000 per day for the hospital to provide a patient bed exclusive of any medical procedures. Given the $2,000 cost per day per patient and the payer mix and payer rates provided, calculate the charge rate required for the hospital to cover its costs (break even).

2. What other factors may complicate the setting of charge rates?

Hint: Solve this problem via Excel.

1. *Input the $2,000 cost per patient in a cell as the estimated charge rate.*
2. *Calculate collections for each of the six patient categories. Use the cell with the $2,000 charge rate for the three categories where the percentage charge applies.*
3. *Sum the collections in the individual patient categories to get total collections.*
4. *Multiply the $2,000 cost rate by 100 patients to get the estimated total cost.*
5. *Compare the total cost to total collections to see if they are equal.*
6. *Judgmentally raise the charge rate until you find the charge rate that makes total collections equal total costs.*

(Alternatively, you can use the Excel Solver feature to solve for the solution charge rate.)

PART

IX

Cost Behavior and Cost–Volume–Profit Analysis

Case 9.1: ABC Clinic

Key concept: Estimating fixed and variable costs via simple regression

ABC Clinic provides a variety of basic medical services in a shopping mall location. It has extended hours on evenings and weekends, which make it a convenient place to receive basic medical care.

Susanna Shuman, clinic manager, has been analyzing the clinic's financial data to try to figure out how she might improve the clinic's profitability. During the first year of its operation, the clinic, on average, charged a little over $100 per visit and was barely profitable.

Susanna obtained the following monthly costs and patient numbers for Year 1:

Month		Patients	Total Cost
January	1	100	$10,000
February	2	105	$11,000
March	3	110	$10,500
April	4	112	$11,500
May	5	110	$11,000
June	6	114	$11,500
July	7	120	$13,000
August	8	121	$12,500
September	9	115	$12,000
October	10	131	$12,500
November	11	125	$12,000
December	12	126	$12,500
Totals for year		1,389	$140,000

Questions

1. What is the best regression estimate of fixed and variable costs for ABC Clinic?

2. What are the total variable costs for Year 1 per the regression equation?

3. What are the total fixed costs for Year 1 per the regression equation?

4. What would be a reasonable estimate of total cost for January of Year 2?

5. With only a 5 percent risk of being wrong, would you accept without investigation a January of Year 2 actual cost figure of $13,950?

Case 9.2: In and Out Clinic Breakeven

Key concept: Determining contribution margin and computing breakeven volume

In and Out Clinic's summary income statement for its most recent fiscal year follows:

Revenues	$20,000
Expenses	25,000
Net Loss	($ 5,000)

The revenue in the income statement was obtained from 100 patients. A judgmental analysis by management of the individual expense accounts indicates that expenses can be categorized as $15,000 of fixed expenses and $10,000 of variable expenses.

Questions

1. Given the cost–revenue relationships in the income statement, is In and Out Clinic above or below its breakeven volume?

2. What is the average revenue per patient?

3. What is the average variable cost per patient?

4. What is the "contribution margin" per patient?

5. Assume that the cost–revenue relationships from the prior year will hold in the current year. Use the following formula for breakeven volume: BE = Total fixed costs / (Unit revenue – Unit variable cost). What is the likely breakeven volume of patients?

Case 9.3: Bradley Rehabilitation Clinic Regression

Key concept: Computing cost equation via regression and determining break-even volume

The Bradley Rehabilitation Clinic (BRC) provides rehabilitation services involving several exercise machines for patients with a variety of temporary and chronic conditions. BRC is a wholly owned subsidiary of McKee Hospital.

BRC is currently performing 20,000 rehabilitation sessions per year, for which it charges $100 each. The clinic contains 12 almost-new stations, each with highly sophisticated electronic machines. Depreciation on these machines totals $100,000 per year.

Fixed operating costs (other than machine depreciation) total $500,000 per year. Variable costs (such as supplies, electricity, and utilities) are $60 per training session.

McKee Hospital currently allocates $400,000 per year of its costs to BRC.

BRC's accountants prepared the following loss statement and suggested that BRC be closed because it is losing money.

Fiscal year		2013	2014	2015
Patients		18,000	19,000	20,000
Revenue		$1,800,000	$1,900,000	$2,000,000
Less:	Supplies	500,000	450,000	400,000
	Utilities	85,000	105,000	100,000
	Salaries and wages	640,000	650,000	700,000
	Depreciation	90,000	95,000	100,000
	Other operating costs	425,000	475,000	500,000
	Allocated McKee Hospital costs	350,000	375,000	400,000
Total costs		2,090,000	2,150,000	2,200,000
Net loss		($290,000)	($250,000)	($200,000)

Assignments and Question

1. Determine BRC's total cost equation using simple regression analysis.

2. Use BRC's total cost equation and compute breakeven volume.

3. What does the analysis suggest about possibly closing the clinic?

Case 9.4: Hill Climb Clinic

Key concept: Determining breakeven volume graphically due to step costs

Hill Climb Clinic (HCC) is a walk-in clinic (urgent care center) where individuals can receive treatment for injuries or illnesses. The most frequent complaint of HCC's patients is sore throat / sinus congestion. The clinic attracts patients through its convenient location on a main thoroughfare and the large lighted billboard above its building. The billboard reads, "Let us make you feel better. We charge less than 50 percent of the average emergency room cost."

HCC is open 7 days a week, 365 days a year. It sees an average of 50 patients per day based on a normal medical staffing rate of one doctor and two nurses. The clinic also has administrative staff. The medical personnel are currently at maximum efficiency, so an increase in volume would necessitate the hiring of part-time contract MDs. This hiring would cost $10,000 for each additional increment of 10 patients per day above the current volume of 50 patients. The only variable expense is medical and office supplies.

The summary financial statement for the fiscal year ending December 31, 2015, follows:

Net revenue	**$900,000**
Administrative salaries (4 individuals)	200,000
Physician compensation (2 MDs)	400,000
Nurse compensation (4 nurses)	250,000
Malpractice insurance	40,000
Utilities	30,000
Medical and office supplies	100,000
Equipment and building rental	50,000
Total operating expenses	1,070,000
Net loss	($170,000)

Assignments and Question

1. Graph the revenue line for HCC.

2. Graph the total cost line for HCC.

3. What is the breakeven volume per your graph?

4. Prove your breakeven volume computationally.

Case 9.5: Immunization Clinic Inc.

Key concept: Determining volume to achieve target profit for a taxable entity

Dr. Brandon started a for-profit immunization clinic in January 2013. The clinic was founded with the vision of providing five types of immunization injections for a low price of $10 each, with the aim of making them affordable to all.

Immunization Clinic Inc. is located in a small building rented at a cost of $1,000 per month. The clinic hired one nurse to work full-time and two college students to work 20 hours per week. A certified public accountant (CPA) also was hired at a cost of $1,000 per month to handle billings, collections, payroll, payments, financial records, monthly financial statements, and tax returns. Necessary equipment was purchased for cash. Dr. Brandon has noticed that expenses for medical supplies and advertising have varied while the remaining expenses have been relatively constant.

Between 2013 and 2015, the patient volume doubled. Profits have much more than doubled. Dr. Brandon does not understand why profits have gone up so much faster than patient volume. The CPA prepared the following forecasted income statement for 2016:

Immunization Clinic Inc. Projected Income Statement for Year Ended December 31, 2016			
Revenues			$480,000
Expenses			
	Medical supplies	$160,000	
	Physician salary	60,000	
	Nurse salary	40,000	
	Hourly wages	20,000	
	Payroll taxes—benefits	36,000	
	Rent	12,000	
	Professional fees	12,000	
	Equipment depreciation	5,000	
	Utilities	6,000	
	Advertising	20,000	
	Miscellaneous expenses	15,000	

(continued)

Total expenses			386,000
Income before income taxes			94,000
Income tax expense			23,500
Net income			$70,500

Assignments and Questions

1. Determine the breakeven volume of injections for 2016 using the following formula for the contribution margin ratio approach: Breakeven revenue = Total fixed costs + [(Total variable costs / Total revenue) × Breakeven revenue].

2. Dr. Brandon would like an after-tax net income of $200,000. What volume of injections will be necessary to obtain the desired income? How many injections per day will this be, based on 250 working days per year?

3. Dr. Brandon thinks that 250 injections per day is the maximum possible with current staffing. What options might he consider to help him achieve his target after-tax income of $200,000?

4. Compute the likely 2016 operating leverage, and briefly explain to Dr. Brandon why his net income has increased at a faster rate than his revenues. *(Hint: Degree of operating leverage = Total contribution margin / Profit.)*

5. Briefly explain to Dr. Brandon why his cash flow for 2016 will likely exceed his net income.

Case 9.6: Speedy Medical Clinic

Key concept: Determining breakeven volume for a medical clinic

Pam Smart is CEO of the two-year-old Speedy Medical Clinic (SMC). She needs your help because SMC has had a net loss during both years of its existence. Ms. Smart would like to know the likely breakeven volume for SMC so she can decide on the appropriate strategy for attracting additional patients.

Financial and operational data for the first two years follows:

		Year 1	Year 2
Revenues		$350,000	$420,000
Expenses			
	Building depreciation	$100,000	$100,000
	Equipment depreciation	$50,000	$50,000
	Utilities	$50,000	$53,000
	Administrative salaries	$150,000	$155,000
	Hourly payroll	$100,000	$120,000
	Supplies	$50,000	$60,000
Total expenses		$500,000	$538,000
Income before income taxes		–$150,000	–$118,000
Number of patients		5,000	6,000

Assignment and Question

1. Help Ms. Smart by calculating the breakeven volume to the nearest thousand patients.

2. What actions might Ms. Smart consider that might help Speedy Medical Clinic break even?

PART

X

Understanding Relevant Costs for Decision Making

Case 10.1: Metropolitan Hospital Laboratory

Key concept: Preparing a contribution margin statement and making short-run and long-run decisions about closing

The Metropolitan Hospital Laboratory conducts a wide variety of tests, but the 2015 departmental income statement, included below, shows a large amount of red ink. Financial analysts have recommended that the department be closed because of the red ink.

Revenue (net)			$1,200,000
Less:			
	Direct labor expense	$400,000	
	Supplies expense	$520,000	
	Departmental administration expense	$240,000	
	Depreciation expense	$100,000	
	Allocated hospital overhead expenses	$200,000	
Total expenses			$1,460,000
Profit (loss)			($260,000)

Assignment and Questions

1. Construct a contribution margin income statement.

2. Should the department be closed if we only consider a short-run financial perspective?

3. Should the department be closed if we assume no significant changes at the hospital and a long-run financial perspective?

Case 10.2: Bradley Rehabilitation Clinic Contribution Margin

Key concept: Preparing a contribution margin statement and determining costs relevant for a decision about closing

The Bradley Rehabilitation Clinic (BRC) provides rehabilitation services for patients with a variety of temporary and chronic conditions. BRC is a wholly owned subsidiary of McKee Hospital.

BRC is currently performing 20,000 rehabilitation sessions per year, which it bills at $100 each. The clinic contains 20 recently purchased, electronically controlled exercise stations. Depreciation on these exercise stations totals $100,000 per year.

Fixed operating costs (other than exercise station depreciation) total $500,000 per year. Variable costs (such as labor and utilities) are $60 per training session.

McKee Hospital allocates $400,000 per year of its overhead costs to BRC.

The following loss statement reflects results for the current year:

Revenues	(20,000 × $100)		$2,000,000
Less:			
	Variable expenses (20,000 × $60)	$1,200,000	
	Depreciation expense	$100,000	
	Other fixed expenses	$500,000	
	Allocated McKee Hospital overhead expense	$400,000	
Total expenses			$2,200,000
Net loss			$200,000

McKee Hospital financial analysts have strongly suggested to upper management that BRC be closed due to its losses. As BRC's manager, you disagree with the suggestion about closing but are unsure how best to respond.

Assignments

1. Prepare an income statement in a contribution margin format.

2. Make a recommendation about whether to continue BRC or close it. Support your recommendation with a well-reasoned argument.

PART

XI

Computing Costs per Relative Value Units

Case 11.1: Black Lab

Key concept: How to compute cost per procedure with relative value units

During 2015, Black Lab had revenues of $2,100,000 and expenses of $1,800,000, which resulted in a net income of $300,000. An engineering time and motion study of lab procedures resulted in the following estimates:

Procedure	Estimated Volume	Labor Cost per Procedure
A	1,000	$0.10
B	2,000	$0.03
C	4,000	$0.05
D	7,000	$0.08
E	8,000	$0.06
F	10,000	$0.05

Questions

1. What is average cost per procedure (simple arithmetic average) under the assumption that all procedures are roughly equivalent?

2. Using the previous data, calculate the relative value units (RVUs) and cost per procedure.

3. What advantage does the RVU approach have over average costing?

Hint: Use the following steps for RVU calculations.

1. *Calculate average unit labor cost.*
2. *Calculate RVUs per procedure by dividing unit labor cost by average unit labor cost.*
3. *Calculate total RVUs by multiplying RVUs per procedure by estimated volume.*
4. *Calculate total cost by multiplying estimated volume by labor cost per procedure.*
5. *Calculate RVU unit cost by dividing total cost by total RVUs.*
6. *Calculate per-procedure cost by multiplying RVU cost by number of RVUs for each procedure.*

Case 11.2: ABC Home Wellness Care

Key concept: How to compute cost per activity (service line) with RVUs

ABC Home Wellness Care wants to determine the service cost for home visits. Management judgmentally decided to use only two of the four categories of direct costs, the labor costs and supply costs, to assign all direct costs. It believes that visit minutes are an appropriate cost driver for indirect costs.

The 2016 budget includes $3,000,000 of direct costs and $1,000,000 of indirect costs, as well as the following detailed estimates of volume and expense:

Service Type	Volume of Visits	Minutes per Visit	Direct Supply Costs per Visit	Direct Labor Costs per Visit
Nursing	10,000	30	$20	$30
Occupational therapy	5,000	40	$10	$25
Physical therapy	8,000	60	$30	$50
Respiratory therapy	2,000	50	$30	$40

Questions

1. What is the average cost per unit if we assume all service type visits are roughly equivalent?

2. Assign a cost to each type of visit using RVUs.

3. What advantage does this approach have over average costing?

Hint: Use the following steps for RVU calculations.

1. *Calculate the total direct cost for each type of visit by adding the two categories of direct costs.*
2. *Divide total direct costs by the greatest common denominator (GCD) for those cost categories to get direct RVUs for each type of visit. (Note: Excel has function "GCD" to calculate GCDs for a column automatically.)*
3. *Divide total visit minutes by the GCD to get indirect RVUs for each type of visit.*
4. *Calculate total direct RVUs by multiplying direct RVUs (based on cost) by volume.*
5. *Calculate total indirect RVUs by multiplying indirect RVUs (based on minutes) by volume.*
6. *Calculate direct cost per RVU by dividing total direct cost by total direct RVUs.*
7. *Calculate indirect cost per RVU by dividing total indirect cost by total indirect RVUs.*
8. *Calculate the direct cost per procedure by multiplying direct cost per RVU by number of direct RVUs.*
9. *Calculate the indirect cost per procedure by multiplying indirect cost per RVU by number of indirect RVUs.*
10. *Calculate the total cost per procedure by adding the direct and indirect costs per procedure.*

PART

XII

Cost Allocation

Case 12.1: Clean Tube Laboratories

Key concept: Cost allocation via direct, step-down, and reciprocal methods

Clean Tube Laboratories (CTL) contracts with area hospitals to perform various lab tests for outpatients. CTL is organized into four departments—two support departments (Maintenance and Administration) and two patient departments (Traditional Tests and DNA Tests). The Traditional Tests department tends to be more labor intensive, while the DNA Tests department is equipment intensive.

As part of a push to convert to a responsibility accounting system, management wants to determine the total cost to operate the Traditional Tests and DNA Tests departments. Management wants to allocate, to the two patient departments, the Maintenance department costs based on the depreciation dollars and the Administration department costs on the basis of labor hours recorded by employees in each department.

The following data (with dollar amounts in thousands) appear in the organization's records for the current period:

Department	Total Costs	Labor Hrs.	Depreciation $ (included in total cost)
Maintenance	$10,000	1,000	$1,000
Administration	$15,000	2,000	$2,000
DNA Tests	$30,000	3,000	$8,000
Traditional Tests	$40,000	4,000	$5,000
Total	$95,000	10,000	$16,000

Assignments and Question

1. Allocate the support department costs to the patient departments using the direct method.

2. Allocate the support department costs to the patient departments using the step-down method and starting with the Maintenance Department.

3. Allocate the support department costs to the patient departments using the reciprocal method.

Hint: As an alternative to developing and directly solving for variables in four cost equations via substitution method, the reciprocal solution can be easily accomplished by creating a four-by-four matrix in Excel reflecting allocation proportions for each department and then inverting this matrix using the Excel "Minverse" command to obtain solution parameters for the four variables. The four-by-four inverted matrix can then be multiplied by the one-by-four cost matrix using the Excel "Mmult" command to obtain the final allocations in dollars.

4. What would be the next steps to put the new cost information to use?

Case 12.2: Messy Tube Laboratories

Key concept: Cost allocation via direct, step-down, and reciprocal methods

Messy Tube Laboratories (MTL) contracts with area hospitals to perform various lab tests for outpatients. MTL is organized into four departments—two support departments (Housekeeping and Administration) and two patient departments (Slow Tests and Fast Tests). The Slow Tests department tends to be more labor intensive, whereas the Fast Tests department is equipment intensive.

As part of a push to convert to a responsibility accounting system, management wants to determine the total cost to operate the Slow Tests and Fast Tests departments. Management has decided to allocate, to the two patient departments, the Housekeeping department costs based on the depreciation dollars and the Administration department costs on the basis of labor hours recorded by employees in each department.

The following data (with dollar amounts in thousands) appear in the organization's records for the current period:

Department	Total Costs	Labor Hrs.	Depreciation $ (included in total cost)
Housekeeping	$2,000	10,000	$2,000
Administration	$4,000	5,000	$2,000
Fast Tests	$18,000	20,000	$3,000
Slow Tests	$14,000	60,000	$8,000
Total	$38,000	95,000	$15,000

Assignments and Question

1. Allocate the support department costs to the patient departments using the direct method.

2. Allocate the support department costs to the patient departments using the step-down method and starting with the Housekeeping Department.

3. Allocate the support department costs to the patient departments using the reciprocal method.

Hint: As an alternative to developing and directly solving for variables in four cost equations via substitution method, the reciprocal solution can be easily accomplished by creating a four-by-four matrix in Excel reflecting allocation proportions for each department and then inverting this matrix using the Excel "Minverse" command to obtain solution parameters for the four variables. The four-by-four inverted matrix can then be multiplied by the one-by-four cost matrix using the Excel "Mmult" command to obtain the final allocations in dollars.

4. What would be the next steps to put this information to use?

PART

XIII

Pricing, Budgeting, and Profit Planning

Case 13.1: Health Train

Key concept: Developing a target cost–based price

Medical Center Hospital CEO Thomas Cleverly decided that the not-for-profit hospital needed a new revenue line to help it compete with other hospitals in the area. He envisioned a mobile medical clinic, called "Health Train," which could travel to different neighborhoods and provide annual physical examinations for a low price.

You are an MHA fellow who is assigned to the CEO's office, and the task of doing the initial planning for this project has fallen on your shoulders. You have been able to gather the following information on the Health Train concept:

- An appropriate-sized bus can be purchased for $300,000; it would have a ten-year life and a 10 percent salvage value.
- Equipment for the bus would cost $100,000; it would have a five-year life with no salvage value.
- A physician to staff the Health Train would require $200,000 per year in salary and benefits. The physician could see one patient every 30 minutes and work 1,400 hours per year.
- A nurse to assist the physician would cost $60,000 per year in salary and benefits. The nurse also could see one patient every 30 minutes and work 1,400 hours per year. The nurse would weigh patients, check blood pressure, take blood samples, administer electrocardiograms, and perform other tasks as needed.
- A clerical assistant to handle registration and billing would cost $30,000 per year in salary and benefits.
- Medical supplies for the physicals would run $5 per patient.
- Laboratory tests for the physicals would run $20 per patient.
- Insurance, advertising, fuel, repairs, and other expenses are estimated at $180,000 per year.
- Cleverly insists that the Health Train contribute a minimum of $20,000 per year of profit.

Assignment and Questions

1. Develop a cost-based price for a single physical exam in the Health Train.

2. Assume that the "target cost" is the average cost of a physical exam in local physician offices, which is $200. Does the initial plan meet the target cost?

3. If the initial plan does not meet the target cost, what elements could be redesigned to help meet this target?

4. What other factors might affect the decision to proceed with the Health Train?

Case 13.2: Clean Slice Department

Key concept: Budgeting when resource constraints exist

McKee Hospital provides three types of services in the Clean Slice Department. Because of a hiring freeze by the hospital, the department is limited to 400 labor hours per week for the foreseeable future.

The three service lines at the Clean Slice Department have the following prices and variable costs:

	Service Line 1	Service Line 2	Service Line 3
Price per procedure	$300	$400	$500
Variable cost per procedure	$200	$352	$470
Contribution margin per procedure	???	???	???
Labor hours required per procedure	5	2	3
Contribution margin per labor hour	???	???	???

Assignments and Question

1. Determine the contribution margin per procedure.

2. Determine the total weekly contribution margin under the assumption that the 400 labor hours are allocated to the service line with the highest individual price per procedure.

3. Determine the total weekly contribution margin under the assumption that the 400 labor hours are allocated to the service line with the highest contribution margin per procedure.

4. Determine the total weekly contribution margin under the assumption that the 400 labor hours are allocated to the service line with the highest contribution margin per labor hour.

5. Assume that McKee Hospital's patient needs dictate that Service Line 3 perform a minimum of ten procedures each month. What is the opportunity cost of having to perform a minimum of ten procedures per month in Service Line 3?

Case 13.3: North Side Hospital

Key concept: Preparing a three-month cash forecast (budget)

To make sure sufficient cash is on hand to meet monthly operational needs, North Side Hospital forecasts its monthly cash flows and short-term financing needs.

You have been asked to prepare a cash forecast (budget) for the months of January, February, and March of 2016 using the data provided below:

- Patient revenues (all revenues are initially recorded as a receivable) and expenses forecasted for the first three months of 2016 are as follows:

Month	Gross Revenues	Expenses
January	$200,000	$160,000
February	$210,000	$160,000
March	$220,000	$160,000

- Historical cash collections from patient revenues are as follows:
  50% in month of service
  20% in month after service
  15% in second month after service
  15% uncollectible (contractual allowances and bad debts)
- To encourage prompt payment, the hospital gives a 2 percent discount if payment is made within the month of service. (Note: The 2 percent discount applies to all the 50 percent paid in the month of service.)
- The accounts receivable balance at December 31, 2015, was $40,000, of which $15,000 represented uncollected November revenues and $25,000 represented uncollected December revenues.
- Expenses are paid 50 percent in the month they are incurred and 50 percent in the following month. December expenses were $150,000.
- Cash balance at January 1, 2016, was $40,000, and this is the minimum desired balance. To maintain this balance, any monthly cash shortfalls will be covered via an automatic short-term loan from the bank via a line of credit.

Assignment

Prepare a cash forecast (budget) for the months of January, February, and March. Use the cash budget form on the next page.

Hint: The cash budget form can be completed via the following steps:

1. *Enter the gross receivable for each month in the first column.*
2. *Calculate when and in what amounts the $15,000 November revenues receivable balance will be collected, and enter this information in the form. Enter the amount that will not be collected in the "15% Not Collected" column.*
3. *Calculate when and in what amounts the $25,000 December revenues receivable balance will be collected, and enter this information in the form. Enter the amount that will not be collected in the "15% Not Collected" column.*
4. *Calculate when and in what amounts the January, February, and March revenues will be collected, and enter this information in the form. Enter the amount that will not be collected in the "15% Not Collected" column.*
5. *Enter the early-payment 2 percent discount in each column to the extent appropriate.*
6. *Total the monthly cash inflows for January, February, and March.*
7. *Enter the expense cash payments for December, January, February, and March in the appropriate columns.*
8. *Subtract the expense payments from total cash inflows to calculate the monthly cash change.*
9. *Add the monthly cash change to the cash balance, beginning, to calculate the cash from financing needed to maintain the target cash balance, ending, of $40,000.*
10. *Total out the various columns to check for mechanical errors.*

Description	Gross Receivable	January Collections	February Collections	March Collections	Total Collected Excluding 2% Discount	15% Not Collected	Remaining Receivable Balance
November receivables							
December receivables							
January receivables							
February receivables							
March receivables							
Less: 2% discount							
Total cash inflows from receivables							
Cash disbursements for expenses in month incurred							
Cash disbursement for expenses in month AFTER incurred							
Cash balance change from operations for month							
Cash balance, beginning							
Cash from financing							
Cash balance, ending							

Case 13.4: Westside Hospital

Key concept: Preparing a departmental budget when given volume estimates

The Westside Hospital radiology department is preparing a budget for the following year. A major budget category is hand, foot, and forearm imaging. Current-year admissions for these imaging categories totaled 2,000, which breaks down as follows:

Procedure	Time Required	Volume Proportion	Rate
Hand imaging	10 minutes	60%	$100
Foot imaging	20 minutes	30%	$300
Forearm imaging	30 minutes	10%	$400

The radiology department head thinks there will be a 10 percent increase in volume for next year. This additional volume is expected to have the same procedure mix as the current year. Rates are not expected to change.

The controller projects the payer analysis to be 50 percent Medicare (reimbursement rate = 70 percent of charges), 20 percent Medicaid (reimbursement rate = 60 percent of charges), 20 percent managed care (reimbursement = 70 percent of charges), and 10 percent self-pay (full charges, but 20 percent of self-pay results in charity care).

These three procedures account for 20 percent of the radiology department's current $1,225,000 labor, imaging materials, and overhead expenses, which can be broken down in the following manner:

Labor	$425,000
Imaging materials	$300,000
Overhead	$500,000
Total	$1,225,000

The department's labor expenses are expected to increase 5 percent next year due to an anticipated across-the-board pay raise. Imaging materials expenses are expected to increase 6 percent, primarily due to increases in precious metals costs. The department's overhead expenses are forecasted to remain constant for the next year.

In addition to their individual cost increases, all three expenses are expected to increase by 10 percent due to the overall volume increase.

Assignments

1. Prepare a budget for the next year by completing the following steps:

    a. Calculate the current volume for each imaging procedure by multiplying the total volume of 2,000 by the proportion for each procedure.

    b. Increase the current volumes by 10 percent to get the projected volume for each procedure.

    c. Multiply the projected volume for each procedure by the rates to get gross projected revenues.

    d. Use the reimbursement rates to convert gross projected revenue to net projected revenue.

e. Divide current expenses in each category by current volume in that category to calculate current expense per procedure.

f. Forecast expenses per procedure using individual expense increase information.

g. Multiply the forecasted per-procedure expenses by the projected volume to get total expenses for the procedure.

h. Prepare a summary income statement for overall revenues and expenses.

2. Assume time required per procedure is an appropriate RVU proxy, and calculate cost per RVU. Then use cost per RVU to calculate cost per procedure, compare this number to rate per procedure, and then comment on areas of the budget that might be of most concern to management.

Case 13.5: IOP Boogie Clinic Forecasting

Key concept: Forecasting an income statement for a proposed clinic

Dr. Cheryl Jacobsen was preparing to open a beachfront medical clinic, which would provide a variety of medical services to boogie boarders, surfers, and other beachgoers, in January 2015. She planned to operate IOP Boogie Clinic Inc. as a subchapter S tax entity.

Because she had recently finished her medical residency very much in debt, Dr. Jacobsen needed to borrow money to finance the opening of the clinic. She asked her mother to loan IOP Boogie Clinic $50,000 for operating funds to get started. Dr. Jacobsen promised to pay her mother 6 percent interest on the loan.

Dr. Jacobsen's mother was willing to make the loan. However, at the suggestion of Dr. Jacobsen's stepfather, Tom (a CPA), her mother asked her to prepare monthly financial statement forecasts for the clinic's first year of operation. Tom believed that the forecasting exercise would help Dr. Jacobsen anticipate potential operating problems and make more realistic operating choices.

Dr. Jacobsen was not sure exactly how to prepare forecasted financial statements, but her stepfather said he would help her with the mechanics if she would provide the data about how the clinic would operate.

With a little prompting from her stepfather, Dr. Jacobsen provided the following estimates and assumptions:

- The clinic anticipates 110 patients in January, but this patient volume is expected to increase 12 percent per month.
- Average charge (price) per patient will be $80, and price is not expected to change during the year.
- Salaries and wages expense is estimated to be a fixed amount of $5,000 per month plus a variable amount equal to 30 percent of monthly revenues.
- Rental expense is estimated to be constant at $3,000 per month.
- Supplies expense is estimated at 6 percent of monthly revenues.
- Other expenses are estimated as a fixed amount of $500 per month plus a variable amount equal to 4 percent of monthly revenues.

Assignment and Questions

1. Imagine you are assisting Dr. Jacobsen, and create an Excel workbook using the format on page 192. Prepare the monthly forecasted income statements (operations statements) for IOP Boogie Clinic Inc. for January through December.

2. During what month does the clinic break even for monthly operations?

3. What is the approximate number of patients at the monthly operations breakeven point?

4. During what month does the clinic break even on a year-to-date (cumulative) basis?

5. What is the most critical forecasting assumption? Why?

IOP Boogie Clinic Inc.
Forecasted Financial Statements

Assumptions:

Income [operations] statement

Patient revenues		
January patient volume	110	
Monthly volume growth rate	12%	
Price per patient	$80	
Monthly price growth rate	0%	
Salaries and wages expense	$5,000	monthly fixed
Salaries and wages expense	30%	monthly variable based on revenue
Rental expense	$3,000	monthly fixed
Supplies expense	6%	monthly variable based on revenue
Other expenses	$500	monthly fixed
Other expenses	4%	monthly variable based on revenue

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Fiscal Year Balances
Month	0	1	2	3	4	5	6	7	8	9	10	11	12	
Income [operations] statement														
Patient revenues														
Salaries and wages expense														
Rental expense														
Supplies expense														
Other expenses														
Net income [excess of revenues over expenses]														

PART

XIV

Standard Costs and Variances

Case 14.1: Rapid Lab

Key concept: Preparing a flexible budget and computing variances

Rapid Lab is an independent lab that provides online results for two types of expensive DNA analyses—Test A and Test B—within two hours of receipt of the materials to be analyzed.

During December 2015, Candice Brennan, Rapid Lab's manager, was busy preparing a January 2016 overhead budget for the lab.

Historical performance standards suggested that Test A should require 10 minutes of supervisory time and Test B should require 30 minutes of supervisory time. Supervisory costs are projected at $40 per hour, including fringe benefits.

Test A's machine and supplies costs are $2 per test. Test B's machine and supplies costs are $8 per test. Monthly fixed costs for Rapid Lab are estimated to be $5,000.

Candice used these data to prepare the following monthly budget for January:

	Test A	Test B	Total
Test quantity	2,000	1,000	3,000
Supervisory costs	$13,333	$20,000	$33,333
Machine and supplies costs	$4,000	$8,000	$12,000
Total variable costs	$17,333	$28,000	$45,333
Fixed costs			$5,000
Total budget			$50,333
Standard variable overhead rate			$15.11

During the month of January, a total of 2,300 Test A analyses and 900 Test B analyses were performed, and 55,000 minutes of supervisory time were incurred.

Machine and supplies costs averaged $2 for Test A and $8 for Test B.

Actual total overhead costs for January were $51,000, which consisted of $5,100 of fixed costs and $45,900 of variable costs.

Assignments

1. Prepare a flexible budget for Rapid Lab.

2. Compute the variable overhead spending variance.

3. Compute the variable overhead efficiency variance.

4. Compute the fixed overhead variance.