The largest of the budget expenditures is the *workforce* or *personnel budget* because health care is *labor-intensive*. To handle fluctuating patient census and acuity, managers need to use historical data about unit census fluctuations in forecasting short- and long-term personnel needs. Likewise, a manager must monitor the personnel budget closely to prevent understaffing or overstaffing. As patient-days or volume decreases, managers must decrease personnel costs in relation to the decrease in volume.

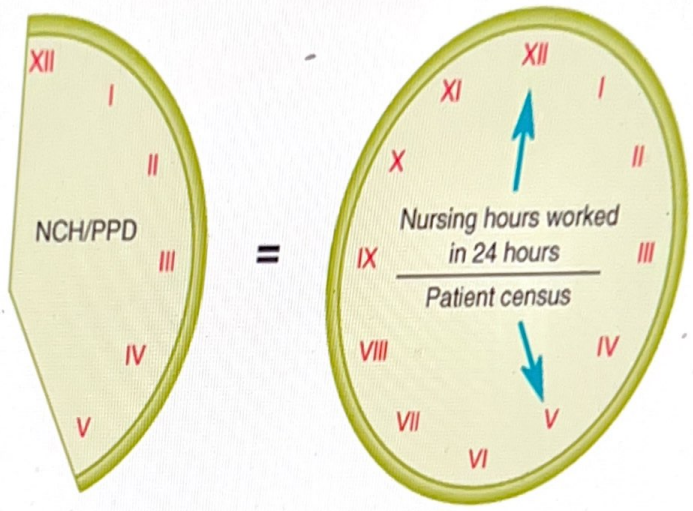
The largest of the budget expenditures is the workforce or personnel budget because health care is labor-intensive.

In addition to numbers of staff, the manager must be cognizant of the *staffing mix*. Staffing mix refers to the mix (percentages) of licensed (registered nurse [RN] and licensed vocational nurse [LVN]) and unlicensed assistive personnel (certified nursing assistant [CNA]/nursing assistive

personnel) working at a given time. The manager must also be aware of the patient acuity so that the most economical level of nursing care that will meet patient needs can be provided.

Although Unit V discusses staffing, it is necessary to briefly discuss here how staffing needs are expressed in the personnel budget. Most staffing is based on a predetermined *standard*. This standard may be addressed in hours per patient-day (HPPD) (medical units), visits per month (home health agencies), or minutes per case (the operating room). Because the patient census, number of visits, or cases per day never remains constant, the manager must be ready to alter staffing when volume increases or decreases.

The standard formula for calculating *nursing care hours per patient-day (NCH/PPD)* is shown in Figure 10.1.



$$\text{NCH/PPD} = \frac{\text{Nursing hours worked in 24 hours}}{\text{Patient census}}$$

FIGURE 10.1 Standard formula for calculating nursing care hours per patient-day (NCH/PPD). (Copyright © 2006 Lippincott Williams & Wilkins. *Instructor's Resource CR-ROM to Accompany Leadership Roles and Management Functions in Nursing*, by Bessie L. Marquis and Carol J. Huston.)

A unit manager in an acute care facility might use this formula to calculate daily staffing needs. For example, assume that your budgeted NCH are 6 NCH/PPD. You are calculating the NCH/PPD for today, January 31; at midnight, it will be

February 1. The patient census at midnight is 25 patients. In checking staffing, you find the following information:

Shift	Staff on Duty	Hours Worked
11:00 PM (1/30) to 7:00 AM (1/31)	2 RNs	8 h each
	1 LVN	8 h
	1 CNA	8 h
7:00 AM to 3:00 PM (1/31)	3 RNs	8 h each
	2 LVNs	8 h each
	1 CNA	8 h
	1 ward clerk	8 h
3:00 PM to 11:00 PM (1/31)	2 RNs	8 h each

	2 LVNs	8 h each
	1 CNA	8 h
	1 ward clerk	8 h
11:00 PM (1/31) to 7:00 AM (2/1)	2 RNs	8 h each
	2 LVNs	8 h each
	1 CNA	8 h

RNs, registered nurses; LVNs, licensed vocational nurses; CNA, certified nursing assistant.

Ideally, you would use 12 midnight to compute the NCH/PPD for January 31, but most staffing calculations based on traditional 8-hour shifts are made beginning at 11:00 PM and ending at 11:00 PM the following night. Therefore, in this case, it would be acceptable to figure the NCH/PPD for January 31 by using numerical data from the 11:00 PM to 7:00 AM shift last night and the 7:00 AM to 3:00 PM and 3:00 PM to 11:00 PM shifts today.

The first step in this calculation requires a computation of total NCH worked in 24 hours (including the ward clerk's hours). This can be calculated by multiplying the total number of staff on duty each shift by the hours each worked in their shift. Each shift total then is added together to get the total number of nursing hours worked in all three shifts or 24 hours: The nursing hours worked in 24 hours are 136 hours.

The second step in solving NCH/PPD requires that you divide the nursing hours worked in 24 hours by the patient census. The patient census in this case is 25. Therefore, 136 / 25 = 5.44.

The NCH/PPD for January 31 was 5.44, which is less than your budgeted NCH/PPD of 6.0. It would be possible to add up to 14 additional hours of nursing care in the next 24 hours and still maintain the budgeted NCH standard. However, the unit manager must remember that the standard is flexible and that patient acuity and staffing mix may suggest the need for even more staff for February 1 than the budgeted NCH/PPD.

The personnel budget includes actual *worked time* (also called *productive time* or *salary expense*) and time that the organization pays the employee for not working (*nonproductive* or *benefit time*). Nonproductive time includes the cost of benefits, new employee orientation, employee turnover, sick and holiday time, and education time. For example, the average 8.5-hour shift includes a 30-minute lunch break and two 15-minute breaks. Thus, this employee would work 7.5 productive hours and have 1.0 hours of nonproductive time.

LEARNING EXERCISE 10.2

Calculating Nursing Care Hours per Patient-Day

Calculate the nursing care hours per patient-day (NCH/PPD) if the midnight

census is 25, but use the following as the number of hours worked:

12 midnight to 12 noon	2 RNs	12 h each
	2 LVNs	12 h each
	1 CNA	12 h
	1 ward clerk	5 h
12 noon to 12 midnight	3 RNs	12 h each
	2 LVNs	12 h each
	1 CNA	12 h
	1 ward clerk	12 h

Now, calculate the NCH/PPD if the following staff were working:

12 midnight to 12 noon	3 RNs	12 h each
	1 LVN	12 h

12 noon to 12 midnight	2 RNs	12 h each
	1 LVN	12 h
	1 ward clerk	4 h

RNs, registered nurses; LVNs, licensed vocational nurses; CNA, certified nursing assistant.

The Operating Budget

The *operating budget* is the second area of expenditure that involves all managers. The operating budget reflects expenses that change in response to the volume of service, such as the cost of electricity, repairs and maintenance, and supplies. Although personnel costs lead the hospital budget, the cost of supplies typically runs a close second.

Next to personnel costs, supplies are typically the second most significant component in the hospital budget.

Effective unit managers should be alert to the types and quantities of supplies used in their unit. They should also understand the relationship between supply use and patient mix, occupancy rate, technology requirements, and types of procedures performed on the unit. Saving unused supplies from packs or trays, reducing obsolete and slow-moving inventory, eliminating pilferage, and monitoring the uncontrolled usage of supplies and giveaways all represent potential cost savings. Other ways to cut supply costs might be in rental versus facility-owned equipment, stocking products on consignment, and just-in-time stockless inventory. *Just-in-time ordering* is a process whereby inventory is delivered to the organization by suppliers only when it is needed and immediately before it is to be used.

The Capital Budget

The third type of budget used by managers is the *capital budget*. Capital budgets plan for the purchase of buildings or major equipment, which include equipment that has a long life (usually greater than 5 to 7 years), is not used in daily operations, and is more expensive than operating supplies. Examples of these types of capital expenditures might include the acquisition of a positron emission tomography imager or the renovation of a major wing in a hospital. The short-term component of the capital budget includes equipment purchases within the annual budget cycle, such as call-light systems, hospital beds, and medication carts.

Often, the designation of capital equipment requires that the value of the equipment exceed a certain dollar amount. That dollar amount will vary from institution to institution, but $5,000 is common. Managers are usually required to complete specific capital equipment request forms to justify their request.