

# 4

## Forecasting Pharmaceutical Expenditures

*Lee C. Vermeulen*  
*James M. Hoffman*  
*Nilay D. Shah*

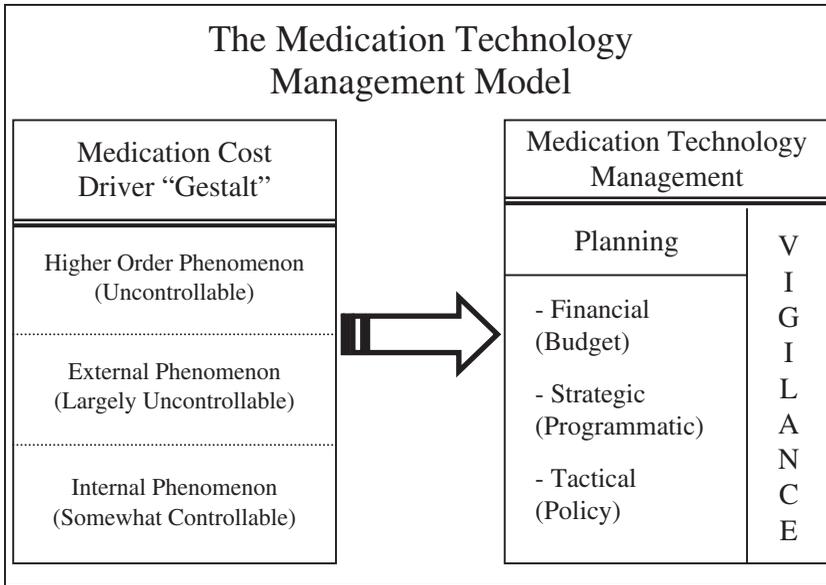
### Introduction

One of the most challenging aspects of financial management in health system pharmacy is the forecasting of future medication expenditures. Drugs are the largest component of every health system pharmacy department's operating budget, so accurate financial planning for drug purchases is crucial to the department's overall financial management efforts. Further, with continuing growth in drug expenditures, drug expense represents a meaningful component of the entire hospitals operating budget. As a result, pharmacy leadership performance in this arena will attract scrutiny from the institution's senior leadership. Developing an accurate prediction of future spending on drugs requires a manager to have a clear understanding of the phenomena that will influence future pharmaceutical expenditure trends. It also requires retaining accurate information about patterns in past medication spending to form the basis for future planning.

Figure 4.1 illustrates a conceptual model that outlines the relationships between the drivers of drug expenditures and the actions that pharmacy leaders must take to manage medication technology and expenditures. As described in detail below, a number of medication cost drivers exist, and the pharmacy leader must respond with multiple planning approaches that are supported by data analysis. Further, a successful plan requires constant vigilance and assessment of medication use and expenditures. While this chapter focuses on financial planning, Figure 4.1 illustrates that strategic and tactical planning is also need for successful drug expenditure management.

The drivers of medication expenditure patterns are complex, including higher order and external factors that are often uncontrollable by any individual. For example, demographic changes in the United States population (i.e., the "graying" of the population), which have increased the US chronic disease burden and resulted in increased medication use, is an example of a higher order phenomenon that is well beyond the control of a pharmacy leader. On a more practical level, Food and Drug Administration (FDA) approval of a new, innovative, and expensive medication is an example of an external phenomenon that is largely uncontrollable, but to some extent pharmacy leaders can proactive plan for these cost drivers.

Other factors within the health system often related to organizational decisions regarding the scope and nature of care provided, may be somewhat controllable by a pharmacy



**Figure 4.1. Medication Management Technology Model**

manager (internal phenomenon as listed in Figure 4.1). For example, an organizational decision to open a new dialysis center which will add several high-cost products to the pharmacy drug budget may be influenced by information provided by a pharmacy leader, but the decision will ultimately rest elsewhere. In these situations, pharmacy leaders must be proactive and assertive to provide relevant information to health system leaders. Some internal phenomena are more easily influenced by a pharmacy manager, provided they are recognized and understood. For example, a decision to replace an expensive brand-name drug with a newly approved generic drug is in the purview of the pharmacy leader (or with a Pharmacy and Therapeutics Committee with which the pharmacy leader should have substantial influence).

With an understanding of the drivers of medication expenditures, pharmacy leaders can reflect upon local trends in utilization and spending to develop robust and accurate forecasts. For nearly 2 decades, the *American Journal of Health-System Pharmacy* has published annual expenditure forecasts that can provide guidance to pharmacy leaders as they develop financial plans and budgets. Recent installments have also included budgeting guidance, proposing a step-wise approach to the creation of an expenditure forecast.<sup>1,2,3</sup> This chapter details that approach, providing guidance to the pharmacy leader striving to forecast and manage medication expenditures. Table 4.1 summarizes the steps of the recommended approach to forecasting drug expenditures.

**Step 1: Obtain and Analyze Data**

Forecasting the future starts with a clear understanding of the past and present. The lack of valid, reliable data necessary for guiding financial decisions is one of the most challenging aspects of financial management in health systems. Financial data must be obtained, validated, and understood at the beginning of the forecasting process. Departmental financial statements,