Decision Making and Forecasting

Decision Making for High Quality Care

Health care managers are responsible for the full functionality of a health care organization, which includes capacity, staffing, services, location, and facility. Managers are also responsible for quality monitoring. Within that framework, information technology (IT) is playing a greater part. Data are important, and accurate data are the keystone for decision making in health care.

New technology drives the cost of health care. Technological innovations, such as personal digital assistants (PDAs), bar code scanners, and handheld order-entry systems, make workloads more efficient while providing a way to minimize errors. As with any innovation, the initial burst of change often leads to higher costs in the long run. Predicting this factor is the job of health care managers.

Decision Platforms

*Decision platforms* help health care managers navigate the complex environment of health care. Because health care has the element of *simultaneity* (produced and consumed at the same moment), health care managers straddle a fence in managing resources. The production of health care is perishable, but it must be used to generate revenues.

Forecasting

This is a method that is used to predict an outcome through planning. Forecasting is used in determining future revenues, patient utilization of services, and the need for new services, as well as other elements of the organization.

Forecasting can be short-, medium-, or long-term. Although it is not precise, it does provide a guide for the organization in charting the future. The underlying premise of forecasting is that the past will repeat in the future.

The following are steps in the forecasting cycle (Ozcan, 2005):

1. Identify the goal of the forecast.
2. Identify your resources.
3. Determine what level of accuracy is required for a forecast.
4. Decide whether the forecast is short-, medium-, or long-term.
5. Establish a time frame in which the forecast will operate.
6. Select a technique or model for the forecast.
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- The models should be empirically tested for validity related to the structure of the organization.

7. Conduct the forecast, and monitor the results.

Forecasting Models

The following are different methods of conducting forecasts:

- Judgmental forecasts
  - These are not mathematical, and are based on opinion.
- Time series approaches
  - These are an observation of events that present in patterns or cycles.
- Averaging
- Naive forecasts
  - These are based on the previous cycle’s values.
- Moving averages (MA)
- Weighted moving averages
- Single exponential smoothing
- Regression analysis
- Trend-adjusted exponential smoothing

The complexity of the model may present problems to small organizations that do not have a statistician. Part of the problem with the quantitative-methods type of forecast is that a level of knowledge is required to apply the models with accuracy to produce reliable outcomes.

Because decision making is an act that is fraught with multiple variables, a structure that provides a linear action plan is desirable. Oczan (2005) provides a decision process model that has the following steps:

1. Identify the problem and its nature.
2. Specify the objectives and decision criteria.
3. Develop alternatives.
4. Analyze and compare the alternatives.
5. Select the best alternative.
6. Implement the choice.
7. Control and monitor the results.

Poor decisions are primarily the result of the uncertainty of health care. Models are used to reduce this uncertainty, and therefore, the risk. Multiple limits,
such as costs, human abilities, and skewed data, may result in poor decisions.

**Reference**